

# American Produce Exchange Markets



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*This volume was planned by Dr. S. S. Huebner, Professor of Insurance and Commerce at the University of Pennsylvania. The papers included were secured and edited by him, and the Academy is under special obligations to him.*

*This work is the third of a series of Academy volumes upon the same related subject. The first volume in the series, which was entitled "Bonds as Investment Securities," was first published in 1907 and reprinted in 1910. The second number in the series dealt with "Stocks and the Stock Market," a volume for which there has been also an unusual demand. The present publication upon "American Produce Exchange Markets" is believed to be a contribution of especial value upon a subject concerning which there is as yet but relatively little published.*

THE EDITOR.

## THE FUNCTIONS OF PRODUCE EXCHANGES

BY S. S. HUEBNER, PH.D.,

Professor of Insurance and Commerce, University of Pennsylvania.

Modern produce exchanges are the product of the last sixty years and have developed in all the leading grain, cotton and provision centers in response to the desire for large and well organized markets. Their ancestry has been traced back to the large and flourishing fairs of several centuries ago, which prevailed in many parts of Europe. Probably the first instance of a modern exchange is that of the Antwerp Bourse,<sup>1</sup> established in the middle of the sixteenth century, and followed soon after by the Royal Exchange of London. Commodities were bought and sold here upon certificates, although the general warehouse or elevator receipts, to be described shortly, were developed much later.

With the development of enormous agricultural areas in the nineteenth century large surplus stocks of agricultural staples were created which far exceeded local demands. This surplus stock required a world market for its proper distribution to the consuming centers, and the development of such a market was greatly facilitated by the tremendous strides of the last century in methods of transportation and communication. Instead of the local fair, the trade now required a market where buyers and sellers from all parts of the world might meet to make transactions in person or by representatives. Convenience and promptness in buying and selling now became essential. Uniformity of usages, high standards of conduct, detailed organization of every branch of the trade, and efficiency in the operation of the business became highly desirable. And so about the middle of the nineteenth century numerous exchanges, sometimes also called boards of trade, chambers of commerce, and bourses, were organized with a view to standardizing trade and giving to it the conditions just enumerated. The Chicago Board of

<sup>1</sup>For a brief account of the early development of produce exchanges, and the reasons for their development, see Mr. John C. F. Merrill's series of articles published in the "Chicago Commerce" during March and April of 1910 on the "Study of the Economic Function of Produce Exchanges in the System of Production and Distribution." Mr. Merrill is President of the Board of Trade of the City of Chicago, and his article contains many valuable suggestions.

Trade was incorporated in 1859, although organized in 1848. The New York Produce Exchange, having existed as an unincorporated association since 1850, was incorporated in 1862. The Merchants' Exchange of St. Louis assumed the characteristics of an exchange in 1854. The New York Cotton Exchange was organized in 1870, to be followed by the Minneapolis Chamber of Commerce in 1881, and the New York Coffee Exchange in 1882. Among the other American produce exchanges where buying and selling is conducted may be mentioned those at Duluth, Kansas City, Mo., Omaha, Milwaukee, New Orleans, Winnipeg, Toledo, Detroit and Buffalo.<sup>2</sup>

Unlike the American stock exchanges, which are private, voluntary, unincorporated associations, our produce exchanges are incorporated bodies. Their rules, organization and methods of procedure resemble each other with few exceptions. In recent years, also, there has been a tendency towards co-operation between the several exchanges similar to the movement in favor of creating an association or trade organization for nearly every other line of commerce in the country. In 1909 the grain exchanges, dealing in grain and provisions, saw fit to create a "Council of North American Grain Exchanges." The exchanges themselves constitute the membership, each being represented by delegates; and at the last meeting they numbered thirteen, viz.: Those of Chicago, Kansas City, Toledo, St. Louis, Duluth, Omaha, New York, Buffalo, Baltimore, Philadelphia, Minneapolis, Milwaukee and Wichita. The object of this organization is "to increase the efficiency and extent of the usefulness of exchanges trading in agricultural products; to promote uniformity in customs and usages; to facilitate the adjustment of business controversies and differences that might arise between members of the various exchanges; to render enforceable the principles of justice and equity; to encourage the enactment of wise and helpful legislation; to enlighten the general public as to the important service rendered by exchanges in handling agricultural products; to cultivate reciprocal relations between the trade of North America and that of other countries; to obtain by affiliation those greater legitimate conditions unattainable by separate and local effort; and,

<sup>2</sup>For a brief description of most of these exchanges and a statement of their distinctive features, see the articles in this volume which deal with several of the important exchanges; and also the series of short articles originally published in the "National Hay and Grain Reporter" of May 20, 1911, and reproduced on pages 227-252 of this volume.



generally, to advance the welfare of the grain trade, its allied interests and all those engaged in the production, handling, marketing and consumption of agricultural products."

### I. THE GENERAL OBJECT OF EXCHANGES

A modern produce exchange may be defined simply as an organized market place which enables people to buy and sell freely certain commodities either in person or through a broker; and which in order to facilitate such trade has for its fundamental objects the promotion of uniformity in customs and usages, the inculcation of principles of justice and equity in trade, the facilitation of the speedy adjustment of business disputes, the dissemination of valuable commercial and economic information, and the securing to its members all the benefits of co-operation.<sup>3</sup> The exchange itself is not organized for the making of money, and does not fix prices or make transactions in the trade as an organized body. It is merely instrumental in affording a convenient market place, in regulating trade, and in disciplining the conduct of its members. Its members act on their own responsibility. They may do as much business as they like, provided they conform to the standards which the rules of the exchange prescribe for the regulation of the trade.

### II. THE REGULATION OF BROKERAGE TRANSACTIONS

In the free buying and selling of our vast crops by thousands of middlemen, it is not at all surprising that many questionable practices should arise. Great importance should therefore be attached by all interests coming in contact with the market to the disciplinary rules which have been adopted for the regulation of brokerage transactions, and the maintenance by this means of a standard of commercial honor in the trade very much higher than would otherwise be the case.

Practically all the exchanges have adopted similar rules in this respect. The greatest care is exercised in electing members to the exchange, and when elected, the new member obligates himself to abide by the constitution of the exchange and all subsequent amendments thereto. Expulsion is the penalty in case a member fails to comply with the terms of any business obligation or with the award

<sup>3</sup>These fundamental objects of a produce exchange will be found enumerated in the constitution of every leading American exchange.

of any committee of arbitration; or in case he deals in differences in the fluctuations in the market or is connected with any bucket-shop. All orders must be executed in the open market and no customers' trades can be taken by members for their own account, either directly or indirectly, on pain of expulsion. Expulsion is also the penalty for making or reporting any false or fictitious purchase or sale, or for being guilty of bad faith, dishonorable mercantile conduct, or any attempt at extortion; and when expelled no member may transact business upon the floor in his own name or through any broker or employe. No member is allowed, under any circumstances, to be both principal and agent in any transaction; nor may a member either by his own act or by the act of another member or broker be placed in the position of agent for both seller and buyer. In all trials the exchange possesses the power to call witnesses or to demand the papers of any firm connected with the case; and suspension is the penalty for failure to testify or produce the records.

For the benefit of the trade the exchange regulates the inspection, grading, weighing, storage and shipment of grain, the brokerage charges for the various types of services rendered, and the deposits necessary to secure the fulfilment of time contracts. Trade committees are appointed for the several kinds of produce to decide disputes and interpret the usages prevailing in each. Weighers and inspectors are appointed and licensed, and agreements are frequently effected with warehousemen and transportation companies. The rights of the respective parties in the various kinds of contracts are minutely prescribed; the settlement of such contracts is outlined in detail; and in case of insolvency, the method of procedure is carefully defined. And lastly, among the many other rules enforced, should be mentioned the practice of arbitrating all business disputes, quickly and cheaply, and with the understanding that purely technical provisions should be no pretext for the avoidance of contractual obligations. So high is the standard of the decisions of the committees of arbitration that they are often given the force of law by the highest courts.

### III. CASH OR SPOT MARKET

As regards the largest exchanges of the country, sales may be divided into two main classes, viz.: (1) "cash" or "spot" transac-

tions, and (2) sales for future delivery, usually called "futures." The difference between these two types of transactions consists merely in the time when the title to the property changes. The "cash" transaction is a "sale" as soon as completed, while the "future" contract is defined as "a contract to buy, or a contract to sell at some definitely prescribed future time." It is common for the press and the public to attach undue prominence to the buying and selling for future delivery, and to overlook the fact that the original and basic object of the exchanges was to furnish a convenient meeting place for the buying and selling of "cash" grain, cotton and provisions, and that to-day an enormous volume of such cash business is transacted upon the "cash" tables which line the floor of every exchange. In fact, it is only the largest exchanges that afford a market for futures, while most of the smaller exchanges are known exclusively as cash markets.

As regards this cash market it is not generally realized that the same contest of intelligence between buyer and seller takes place, the one striving for the lowest possible price and the other for the highest, as in the buying and selling of all other commodities. The great variety of business interests participating in this organized cash market, and its relative importance when compared to the market for futures is well brought out in President Carhart's article on "The New York Produce Exchange."<sup>4</sup> Moreover, the methods and contracts used in this market need no extended treatment here, the reader being referred to the article of Mr. Siebel Harris on "Methods of Marketing the Grain Crop."<sup>5</sup> Suffice it to say that the operation of brokers on an exchange floor are, as President Merrill, of the Chicago Board of Trade, points out, "not unlike in substance, an ordinary auction where the price that the article brings is determined by the demand of the bidders for the article being sold. But here the similarity stops, for commodities are dealt in upon the exchange floor which have a world market, whereas in the auction room the price obtained may be determined by the individual fancy or cupidity of the buyers." The Chicago Board of Trade, as he explains, "is nothing more or less than a great central market for the buying and selling of grain and produce. . . . It is simply a meeting place for buyers and sellers, an institution

<sup>4</sup> See page 206.

<sup>5</sup> See page 36.

maintained by nearly eighteen hundred brokers for the single advantage that thereby time and labor may be saved in the execution of orders to buy, or, sell grain, or provisions. It is not contended that it would not be possible to market grain if every exchange were closed, any more than it would follow that the world would be in darkness if lighting by electricity had never been discovered, or that business could not be transacted without the telephone, the telegraph or the typewriter. Even without the exchange a broker could sell a consignment of grain or provisions by traveling the length of South Water street, or communicating with several hundred millers or grain dealers throughout the country. But modern business, and particularly the business of marketing the grain and provisions of this country, has grown to too great proportions to permit of such an unwieldy and costly system."

#### IV. THE BUYING AND SELLING OF FUTURES

No feature of our produce exchanges has met with so much adverse criticism as the buying and selling of produce "for future delivery," especially in view of the fact that such dealings are inseparably connected with the practice of "short-selling." In later sections of this paper it will be shown that the future contract and the short sale are essential for many reasons, and that the produce business of the country could not be conveniently conducted without their use. The object of this section, however, is merely to show in brief the manner in which this market for "futures" is organized.

The financial page of any important daily newspaper will furnish a table of quotations for wheat, corn, oats, cotton, and coffee arranged by months. On October 10, 1910, the Chicago quotations for wheat were as follows:

Wheat.	Open.	High.	Low.	Close.
December .....	.97 $\frac{7}{8}$	.98 $\frac{5}{8}$	.97 $\frac{7}{8}$	.98 $\frac{1}{4}$
May .....	1.03 $\frac{3}{4}$	1.04 $\frac{5}{8}$	1.03 $\frac{3}{4}$	1.04 $\frac{1}{4}$
July .....	.99	.99 $\frac{3}{4}$	.99	.99 $\frac{3}{8}$

This table shows that dealers on the Chicago Board of Trade were on this day selling wheat for future delivery in some designated future month at an agreed price. In the case of "May Wheat" in the above table the dealer definitely agreed to sell a

certain quantity of "contract grade" wheat at \$1.04¼. This wheat the seller can deliver at any time between the first and last days of May, but when the last day of May arrives he must deliver the quantity sold at the price originally agreed. It will be noticed that May wheat is selling considerably higher than December wheat, and a moment's reflection will show that this should be the case because between December and May many charges have accumulated which must be included in the price. Thus, during this interval, the interest on the capital invested must be allowed for; storage charges must be met according to the advertised rates of the elevators; and insurance premiums must be paid. The dealer, in other words, must keep in mind all these accumulating charges, and they should be reflected in the price of wheat sold for delivery in May, as compared with the price of the same wheat when sold for December delivery. But it will be asked, why should July (1911) wheat be sold at 99¾c., when May wheat, representing an earlier month, sells on the same day at \$1.04¼? Here it must be remembered that these prices, besides including the expense items just mentioned, must also reflect the discounting process which speculators always have in mind when selling grain for future delivery. Consequently, we find dealers on October 10, 1910, selling wheat for delivery in July, 1911, and in doing so they are already looking towards next year's crop, which begins to come on the market in July, whereas May wheat has reference to the old crop harvested in 1910. Many, if not most of the dealers selling this wheat for future delivery probably do not possess the grain but are selling short, i. e., are selling something which they do not now possess, expecting, however, when May or July arrives, to go into the market and buy the same for delivery purposes.

In selling for future delivery, unless the contrary is expressly stipulated, the contract calls for the delivery of "contract grain." On the Chicago Board of Trade this term comprises as regards wheat "No. 2 red winter," "No. 1 Northern spring" and "No. 2 hard winter wheat." In other cities different requirements for contract grades exist, i. e., the contract grade is adapted to the necessities of the particular market. Thus, on the Minneapolis Chamber of Commerce, situated in the heart of the Northern spring wheat district, "No. 1 Northern spring" wheat constitutes the contract grade. In Duluth "No. 1 Northern spring" wheat constitutes



the contract grade, but "No. 2 Northern" may be delivered on contract at 5 cents per bushel under the price of the former. Again, on the New York Produce Exchange, where the market for grain is not nearly as large as in Chicago, a very much larger latitude is shown. The contract grades in this city comprise "No. 2 red winter" and "No. 1 Northern spring" wheat, but "No. 2 Northern spring" wheat may be delivered at a discount of 5 cents and "No. 3 hard winter" wheat at a discount of 7 cents. This latitude is permitted for the purpose of relieving short sellers from the requirement of delivering a particular grade when the "cornering" of that grade might make it impossible for them to purchase the same for delivery on their contracts. For the same reason the contract for future delivery used in the cotton and coffee markets permits the delivery of a large number of grades.

It is also essential that both parties to a future contract should know that the agreement will be fulfilled at the time when the delivery is to be made. If a miller buys 10,000 bushels of wheat in October for delivery next July it is only reasonable that he should have some security which will protect him against failure on the part of the seller to deliver this quantity in the specified month. Similarly, the seller should be in a position to demand security from the miller so that he may rely upon the buyer's financial ability to take the wheat at the contract price when the time arrives for delivery.

With a view to protecting both parties to the contract the rules of our exchanges authorize both buyer and seller to ask of each other the deposit of a margin equivalent to 10 per cent of the market price, this margin to be increased or decreased by each party according to fluctuations in the market. Each party has a lien on this margin and in case of non-fulfilment of the contract the deposit becomes available so that, in view of the original market price, the contract may be liquidated without loss to the party not at fault. These deposits are made in accordance with the rules of the exchange and can be left either with some official of the exchange, designated for that purpose, or with some bank approved by the exchange.

V. EXCHANGE REGULATIONS FACILITATING TRADE OPERATIONS IN  
THE "CASH" AND "FUTURE" MARKETS

The value of exchange rules supervising the conduct of members has already been referred to. But special reference should be made to the supervision of exchanges over the inspection, grading, weighing and storing of produce, and the issuance of "general warehouse receipts" to represent title to the same. Such supervision is of the utmost importance to the proper operation of large "cash" and "future" markets. By virtue of this efficient supervision, as stated by President Merrill, of the Chicago Board of Trade: "both the buyer and the seller are guaranteed a square deal, both as to the quantity and quality of the grain which changes title."

As H. C. Emery states in his "Speculation on the Stock and Produce Exchanges of the United States": "It was only with the development of the warrant and grading system that the real 'future' became possible." The first "warrant" or "warehouse receipt" to develop was a special receipt which represented a specific lot of produce, but, since no general grading system existed, this receipt was not adapted for the making of sales for forward delivery. It was in the metal market that a "general receipt," which represented not a particular lot deposited in some designated place but, instead, *any* lot of a given amount and grade, was first used. Such general receipts were the result of a thorough system of inspection and grading which made possible the storing of any amount of a given commodity of a given grade in bulk. Identification of particular "lots" now became unnecessary. Numerous lots of the same grade, although owned by different persons, could be stored in bulk and taken out later on the representation of general receipts issued at the time when the commodity was deposited. In the meantime, however, while the commodity was stored in bulk, title to its ownership could be readily transferred from hand to hand, the receipt being transferable by endorsement without the actual transfer of the goods represented. In the grain, cotton and coffee markets such general receipts became the rule after 1860. As Mr. Emery well explains: "With the enormous storings of grain in bulk, however, the difficulties of delivering at any moment the actual wheat deposited on a warrant became increasingly great. Consequently a change was made to the system of general receipts.

Grain received by the railroad or the warehouse was properly graded and classified, and all the grain of the same grade was stored in bulk without regard to particular lots. A delivery of the receipt constituted a fulfilment of a contract, and, in fact, the receipts themselves might be considered the commodity bought and sold since they were receipts to receive a certain amount of the given grade on demand."

To make possible such convenient transfers of property from buyer to seller it is essential that all the factors preliminary to the issuance of such general receipts should be thoroughly supervised, so that the genuineness of their face value will go unquestioned. This the exchanges are instrumental in doing. The system of inspection, grading and weighing, which they have adopted with the assistance of the several state governments, has reached the highest standards. Next, the rules of the exchange look to the supervision of the storage of grain in the great collecting and distributing centers. According to the Chicago Board of Trade, for example, the owner of an elevator, whose holdings of grain can be delivered on contracts made on its floor, must be of unquestioned financial standing, and his books are subject to examination by the properly constituted committee of the exchange as often as is deemed advisable. The elevator must be of the most improved character. It must be properly situated and must have proper connection with steamboat lines and trunk lines. The reasons for these requirements are apparent, because when grain is sold for future delivery on an exchange, it is essential that the buyer should know that when the grain is delivered it will not be stored in a location which will put the buyer to any disadvantage. If an elevator complies with all these requirements, the rules of the Chicago Board of Trade designate it as "regular"; and it is only grain located in regular elevators which is available for delivery on future contracts made on its floor.

Having carefully supervised the inspection, weighing, grading and storing of the grain, it is now possible to store the enormous consignments of particular grades of grain in bulk, and permit the elevator companies to issue general receipts to the owners of this grain, provided that these receipts are so carefully drawn as to be readily transferable upon sale or acceptable as collateral. Here, again, the exchanges exercise a supervisory influence in prescribing

the form such receipts must take. All receipts issued by a given firm from any one of its elevators must be consecutively numbered, and are good only for one year. The receipt is dated and gives the name of the company issuing it, the name of the elevator, the quantity of the grain represented, the particular grade of the grain, and also certain stipulations limiting the liability of the company, especially with reference to loss by fire or heating. The receipt is subject to the regular advertised storage charges, and stipulates that the grain represented will be delivered only upon surrender of the receipt and the payment of accumulated charges. It is signed and countersigned by certain officers of the company, is in nearly all cases negotiable, and, if issued by an approved elevator, is acceptable as a delivery on exchange contracts.

#### VI. EXCHANGES GIVE THE QUALITY OF MOBILITY TO PRODUCE

The delivery of warehouse receipts on exchange contracts gives to the grain, cotton and produce they represent the same quality of mobility, for purposes of sale or deposit as collateral, as is given to corporate property represented by stocks and bonds listed on our stock exchanges. If it were not for organized markets and the existence of warehouse receipts, the vast quantity of produce lying in warehouses and elevators, aggregating hundreds of millions of dollars, would not be available for business purposes except in a very crude way. If the holders of such produce wished to borrow against it, it would be necessary each time to have the creditor see and inspect the same; and every such inspection would necessitate great inconvenience and unnecessary delay and expense.

At present the greater part of the country's enormous crops is purchased from the farmer by warehouse and elevator men during the three or four months of the crop moving season, and is then gradually sold to the consuming public during the balance of the year. The farmers, as a rule, demand immediate cash payment, although the grain dumped on the market greatly exceeds the current demand. This accumulation of grain in elevators and warehouses, the grain being paid for as soon as it leaves the farmers' hands, requires the expenditure of hundreds of thousands of dollars in excess of the available capital of the buyers, this in turn necessitating on their part extensive borrowing from bankers

against so-called "grain paper." If grain buyers could not borrow against their purchases, it would mean that upon buying a consignment of grain, they would have to transport the same with a view to selling it in another market and wait for the proceeds of the sale before making a new purchase. This might necessitate several weeks' delay. Since their business is a highly competitive one, depending upon the making of a small profit, averaging about one per cent on the present value, such delay would make the grain buyers' business not only an unprofitable one but would greatly handicap them in getting their share of the grain within the three or four months of the crop moving season. To make the grain buying business profitable, it is necessary for the buyers to transact the business on credit, and it is estimated that approximately nine-tenths of the country's grain and cotton crop is originally purchased with borrowed funds.

The ease with which grain buyers under present conditions avail themselves of bankers' credits may be briefly illustrated. Let us assume a grain buyer to be the possessor of \$100,000 of capital for the buying of grain, and that the price during a given period continues to be \$1.00 per bushel. He buys 100,000 bushels of wheat with the intention of forwarding it to the East for sale. To do this will require several weeks, and possibly he may find it desirable or necessary to hold this grain for several months before disposing of the same. Yet the nature of his business demands that he liberate his capital for new purchases long before he sells his present holdings. He proceeds to do this by having his 100,000 bushels of wheat inspected, graded, and represented by a warehouse receipt or a bill of lading. He also has the same insured in a reputable fire insurance company against loss by fire, and "hedged" on some exchange against loss from a decline in price. Then he will take the grain paper, representing his 100,000 bushels, and the fire insurance policy to his banker as collateral security for a loan, and the banker will grant a loan against this grain to the extent of about ninety per cent of its value or \$90,000 according to our assumption. If the banker knows that the grain is hedged, he will know that his risk is greatly reduced, as will be shown in a later section of this paper.

With wheat remaining at \$1.00 per bushel, our grain buyer may immediately purchase another 90,000 bushels, again have the



same inspected, graded, hedged, insured against fire, and represented by receipts. These receipts may again be offered as collateral for a new loan of ninety per cent of the value of the last lot of 90,000 bushels, or \$81,000. With this new credit, the buyer may immediately purchase 81,000 bushels of grain, again have the same inspected, graded, hedged, insured, and represented by receipts, again make a new loan for ninety per cent of its value, purchase immediately another lot of grain, and continue this operation until his original capital has been entirely, or almost entirely, absorbed in margins. Beginning with only \$100,000 capital, this grain buyer has been enabled, through the ease with which grain can be rendered mobile under present conditions, to do a business seven or eight times as large as would be possible under other conditions, and his profits are correspondingly greater. The farmer, on the other hand, has been benefited in that he may dispose of his entire crop within a short time, and on a cash basis, irrespective of the immediate demands of the consuming world. When the grain buyer is ready to begin selling his grain, he will usually sell that lot upon which there is no lien, or which may have been purchased with funds secured on his own notes. Realizing from the proceeds of this sale, he will redeem his loans, gradually releasing one group of collateral after another, thus enabling him to continue selling wheat until he has it all sold.

#### VII. EXCHANGES FURNISH A CONTINUOUS MARKET

But, it will be asked, why do bankers lend so extensively on grain paper when they know that the price of the grain held as collateral may decline in a week or two by much more than the ten per cent margin? The answer is that they do so partly because the grain may be hedged against such price fluctuations, and also because they know that grain always has a ready market on our produce exchanges, thus affording them ample opportunity at any time, if they deem it necessary, to sell the grain held as collateral before the margin of ten per cent on the loan is exhausted. During every hour of every business day, there is always present on our produce exchanges a group of brokers and speculators always ready to buy and sell, and so numerous as to furnish a continuous market where in the course of a few minutes and with the sacrifice of only a small amount in the price, hundreds of thousands of

bushels of grain may be either bought or sold. This continuous feature of large produce markets serves as a means of insurance to farmers, bankers, grain dealers, speculators and manufacturers in so far that it gives positive assurance to all holders of grain, cotton and produce that, in case of necessity, they can, at a moment's notice, by selling it at approximately the prevailing price, convert that produce into cash.

The existence of such continuous markets is greatly facilitated by the presence of a group of speculators who are willing to buy any supply that may be offered, because in their judgment a profit will be derived by selling it at a future time. The advantage of such continuous buying to the banker has just been explained; and its absolute necessity to all who wish to hedge their holdings of produce will be explained shortly. But a continuous market throughout the year and at reasonably steady prices is also essential to the farmer. As stated, farmers realize upon the larger part of their crops shortly after harvest, and were it not for the large group of buyers who are always willing to take the grain with a view to storing it and selling it for future delivery, it would necessarily follow that prices would fall extremely low at harvest and rise unduly just before harvest. Mr. Merrill, President of the Chicago Board of Trade, suggests that "the testimony of all large grain merchants is that formerly the price of handling grain averaged six, eight and ten cents a bushel, as compared with an average of a two cent margin at the present time." Or it may happen, as Mr. Merrill explains, that "the farmer may have his crop still in the ground or he may have it upon his farm awaiting a time when the roads are in condition to bring it to market, or he may have it stored in an elevator at his own expense waiting for a better price—yet in each of these cases he can, and usually does, dispose of his surplus crops by selling them through a broker upon some board of trade for delivery at a future time."

#### VIII. THE CONTINUOUS MARKET IN FUTURES AS A MEANS OF INSURANCE TO MANUFACTURERS AGAINST LOSS OF TRADE PROFITS

In much the same way, the miller or manufacturer finds a continuous market of the greatest service. He may receive an order to deliver 5,000 barrels of flour five months from date at a

stipulated price, and not having the wheat on hand wishes to know if he can safely accept the contract. Or his elevator capacity being small, he might desire to make sure of a regular supply of wheat from month to month, and at prices which will be profitable, to keep his mill working to full capacity. Without a continuous market in futures, this miller would be unable to secure his supply months in advance and at definite prices, and every order for the future delivery of flour would be a speculation, unless he actually held the necessary wheat at the time the contract is accepted.

The purchase of grain and its storage prior to the acceptance of orders for the future delivery of flour, however, is entirely unnecessary under present conditions. Suppose that in July a miller receives an order for 5,000 barrels of flour to be delivered within five months (i.e. in November) at say \$6.50 per barrel. As soon as he receives this order, and let us assume that he must acknowledge its acceptance or rejection immediately, he can at once communicate with his broker to ascertain the present price of wheat to be delivered to him, say in the month of October, or in any other month which may suit his convenience. Since the market in futures is a continuous one, he will always find it possible to buy the necessary amount of wheat at a stipulated price. As soon as he is informed of the price at which wheat, deliverable in October, is selling, he can at once determine whether this price will enable him to manufacture flour profitably at \$6.50 per barrel. If he finds the price of wheat satisfactory, he can at once accept the contract for the delivery of the flour in November, at the same time giving his order for the purchase of the requisite amount of October wheat at the prevailing price. Having concluded the two orders, the miller is absolutely certain of his trade profit, irrespective of future fluctuations in prices.

A rise of thirty cents per bushel would more than have wiped out his trade profit had he accepted the order without at once purchasing wheat. This contingency, however, is now eliminated because he has a definite promise to receive the wheat according to the terms of his future contract, the fulfilment of which promise he can secure by a deposit of a margin as already explained. On the other hand, if the price of wheat declines, it may be argued, he would have been better off if he had not purchased the wheat for future delivery. But the miller entered the speculative market

with a view to avoiding speculation. He is after a milling profit only and wishes to run no chances. Having contracted for the future delivery of the flour, he uses the exchange market to buy a corresponding amount of wheat for future delivery at the desired time. The advantage which he would have had, in case wheat declines, in not having purchased in advance, he regards as an insurance premium for the safety secured, just as the manufacturer is willing to pay a premium to an insurance company to relieve himself of the danger of fire, although no fire may occur. What has been explained here for the miller, may also be explained for the maker of cotton goods and many other classes of manufacturers. They buy in advance on exchange markets at definite prices, also accepting contracts for the future delivery of the finished product at definite prices, and are therefore assured of reasonable profits. They have eliminated all gamble by resorting to the speculative market, the burden of risk having been thrown upon those whose business it is to assume speculative risks.

#### IX. PRODUCE EXCHANGES ARE CLEARING HOUSES OF INFORMATION

Produce exchanges also serve as a world's clearing house for trade and crop information, and in this respect render an invaluable service to producer, middleman and consumer. All our leading crops are produced over such large areas that few individuals have it in their power to keep in daily touch with current crop and trade events except it be in their own particular locality. The prices of nearly all leading cereals are determined by national or world-wide conditions, and the favorable or unfavorable condition of a crop in one locality or country may be so outweighed by the opposite condition elsewhere as to render worthless a price quotation based upon local evidence.

To-day, however, all the leading produce exchanges are in constant touch with crop conditions, weather reports, the movements of grain, changes in freight rates, the rate of consumption, economic legislation, political complications, etc.; and all this information as currently received is given immediate expression in the form of purchases and sales at prices which are immediately transmitted by wire to all the trade centers, and soon made available to the general public by the daily press. Communication by wire and the ticker has connected the world's exchange markets so as to

make them practically one. Only a few minutes will serve to place the leading foreign exchanges and such important American markets as those at Chicago, New York, Minneapolis, Duluth, St. Louis, Kansas City and Toledo in possession of each other's quotations. All the leading exchanges spend thousands of dollars for the prompt acquisition of information. This information covers a very wide range and relates to the size and quality of the growing crops here and abroad, daily changes in the weather, etc., affecting the crops, the volume of sales and the price, the arrival and shipment of cargoes in leading markets and foreign centers, and the "visible supply" here and abroad.

The value of this prompt and elaborate collection of trade information is fourfold, viz.:

(1) IT MAKES POSSIBLE THE DISCOUNTING OF THE FUTURE, i. e., it enables dealers and speculators to exercise their best judgment at once in the form of actual transactions, and thus to reflect this current information in the quotations long before it would otherwise be impressed upon the general public. Thus, the effect of a short or bumper crop upon prices is reflected, i. e., discounted, weeks in advance. The United States Government publishes monthly elaborate crop reports which are given the widest circulation, but it generally happens that these reports cause scarcely a ripple in the market. Dealers have ascertained the condition of the crop long in advance of the government's report, and when the good or bad news becomes common property its effect is apparently lost. The news has already been discounted, and the market has already gradually adjusted itself to a lower or higher level in accordance with the gradual improvement or deterioration of crop conditions. Mr. H. C. Emery states the matter well when, in referring to speculation on our exchanges, he writes: "With this body of keen experts striving by the use of private wires, special agents and every other means, to discover and foresee every other event bearing on values, speculation has been well defined as the struggle of the well-equipped intelligence against the rough power of chance."

(2) IT STEADIES PRICES. The daily discounting of current events makes unnecessary, except in rare instances where manipulation has interfered with the smooth working of the organized market, a sudden decline or rise in price upon the wide publication



of events which have been slowly developing. An elaborate statistical compilation of prices covering a period of 40 years,<sup>6</sup> one-half of this period ante-dating dealings on exchanges and the other half following the introduction of such exchanges, shows clearly that the fluctuations in the price which the farmer received for his grain or cotton was not nearly so great during the twenty years when exchange markets were in operation as it was prior to the existence of exchanges. As will be explained later, the middlemen who handle the crops use the speculative market to eliminate the risk of price fluctuations by unloading that risk upon a group of speculators instead of on the producer, and can thus give the farmer the best price. In fact, the prices prevailing during the crop-moving months, as illustrated by this statistical investigation, seem so unusually high when compared with the prices of succeeding months, that it is difficult to see how the speculative contingent in the market realized much of a profit.

Without organized exchanges for the immediate discounting of information, the individual producer would find himself in a most defenceless position, unable to know the fair value of his crop from day to day. In this respect the produce exchanges serve the producer in the same way that the stock exchanges benefit the holder of securities. As stated in my article on "The Scope and Functions of the Stock Market": "Without an organized market the farmer would not know the price of his grain from day to day, because transactions, if private, would not be recorded, might be designed to mislead, and certainly would not be representative of the general judgment. He would be exposed to a hundred times the fraud of to-day. He could be easily misled by unscrupulous counsellors into selling his produce far below its fair value. . . . To-day, however, every newspaper of any importance in the country gives daily produce quotations for the day before, and the holder cannot be deceived as to the price. These quotations reflect the average combined judgment of many minds, which is given concrete expression in actual transactions on the floor of the exchange. Through the widespread publicity of such quotations the world over, the holders of grain are given gratis the combined opinion of

<sup>6</sup>See Volume VI of the United States Industrial Commission, 1900.

<sup>7</sup>See *Annals of the American Academy of Political and Social Science*, May, 1910. This quotation has been modified slightly in order to make it applicable to produce exchanges.

the most competent dealers as to the value of that grain at present and its prospective value in the future. Since these dealers have in mind the future rather than the present, their initiative in making purchases and sales will tend to discount the effects of coming events. The holder of the grain, if he be a thinking and observing man, is free to disregard these quotations if he chooses; but if their trend is pronounced they may serve as a guide by which he may regulate his own action relative to the holding or selling of his produce."

The tendency towards steadying price movements and obviating numerous extreme fluctuations is also facilitated by the operations of the bear crowd. The bear in this respect, again serves the same purpose as in the security market, although in a number of other respects, as will be shown later, he is a much more necessary factor in the produce market than in the security market. In the article, just referred to, it was explained that\*: "Short-selling in the produce market is often of the greatest benefit in repressing rampant speculative enthusiasm on the one hand, and in checking the effect on prices of excessive pessimism on the other. Short sellers do not determine prices. By selling they simply express their judgment as to what prices will be in the future. If their judgment is wrong they will suffer the penalty of being obliged to go into the market and buy the commodity at higher prices. Nine-tenths of the people are by nature 'bulls,' and the higher prices go, the more optimistic and elated they become. If it were not for the group of short sellers, who resist an excessive inflation, it would be much easier than now to raise prices through the roof; and then, when the inflation became apparent to all, the descent would be abrupt and likely unchecked until the basement was reached. The operations of the 'bear,' however, make excessive inflation extremely expensive, and similarly tend to prevent a violent smash, because, the bear to realize his profits, must become a buyer when he covers. . . . Short-selling, instead of unduly depressing prices as many would have us believe is often the most powerful support which the market possesses. It is an ordinary affair to read in the press that the market is sustained or put up at the expense of the 'shorts' who, having contracted to deliver at a certain price can frequently be

\* *ANNALS*, May, 1910. The following quotation has also been altered slightly to correspond to the conditions of the produce market.

driven to 'cover.' Short-selling is thus a beneficial factor in steadying prices and obviating extreme fluctuations. Largely through its action, the discounting of serious and unfavorable events does not take the form of a sudden shock or convulsion, but, instead, is spread out over a period of time, giving the actual holder of produce ample time to observe the situation and limit his loss before ruin results. The constant contest between the judgments of the bulls and the bears is sure to give a much saner and truer level of prices than could otherwise exist. 'No other means,' reports the Hughes' committee, 'of restraining unwarranted marking up and down of prices has been suggested to us'."

(3) IT HELPS TO REGULATE THE RATE AT WHICH THE YEAR'S CROP IS CONSUMED. The modern grain and cotton markets are so organized to-day that the distributing interests in the trade are constantly informed as to the "visible supply" on hand, which may be defined as representing all grain, or any kind of given produce, which is stored in warehouses, elevators, cars or boats, and which is available for purchase. It is a well recognized fact that the exchange quotations for contracts which call for delivery in the new crop months depend not entirely on the prospects of the new crop, but are vitally influenced by the smallness or largeness, as compared with previous years, of the old crop yet unsold, as reflected by the "visible supply," or by statistics relating to holdings which have not yet left the producers' hands.

Owing to the fact that warehouses and elevators in all the important distributing centers are regulated by law or by the rules of the local board of trade, or both, it is possible to collect data periodically as to the holdings of grain. These statistics are published regularly in the form of visible supply tables. The United States Government Crop Reporter publishes such tables for this country and foreign markets. Many of the exchanges collect and publish full tables of this kind, and Bradstreet's Mercantile Agency issues weekly a comprehensive table for various kinds of grain and for approximately seventy cities. Such tables not only enable prospective purchasers to know just where they may look for marketable grain, but also makes it possible for dealers to judge the amount of available grain in the market throughout the country; and, when viewed in connection with similar statistics of former years will serve as a guide in fixing the price, and by doing this exert an effect-



tive influence in regulating the consumption of the crop. If the visible supply, considered in connection with the known stocks of grain still in the farmers' hands, is unusually low as compared with the same supply a year ago, it is likely under normal conditions, that the price will be bid up and consumption decrease, and if unusually high it may be expected that prices will decline and consumption increase. In this way the movement of prices will indirectly benefit the community by regulating consumption so that each year's crop, whether large or small, just happens to meet the needs of the consuming world.

(4) IT SERVES TO LEVEL PRICES BETWEEN DIFFERENT MARKETS. Reference is had here to the practice of "arbitraging" between markets. Arbitraging may be defined as the making of two transactions, one a purchase and the other a sale, in different markets or in the same market between two different subjects of trade, at about the same time with a view to shaving a profit because the price in the one market, or the one subject of trade, is lower than in the other. It is apparent that this practice is made possible only by the quick transmission of quotations from one exchange to another and the existence of continuous markets so large that the purchase in the one market and the sale in the other can be immediately executed. Promptness in knowing and acting is the essence of an arbitrage transaction, and the writer has been told of instances where just a few seconds sufficed to make two deals on separate exchanges located in different cities. It should be added that arbitraging also depends upon the existence of the short sale.

Several methods of arbitraging can be used in the produce market. In the first place, if the arbitrageur knows that wheat is selling lower in Minneapolis than Chicago by an amount greater than he thinks ought to be the case, in view of transportation and other charges, he can use the low market for making an actual purchase of wheat, and at the same time use the high market to sell short an equal amount for future delivery during some convenient month. He may then transport the wheat from the low market to the high market and deliver the same in fulfilment of his short sale. No speculative risk is apparent in this deal. Just as soon as the purchase and sale were executed, and both were made at a definite price, the arbitrageur knows his profit, assuming that he knows the cost of conveying and delivering the actual grain, and

that this cost together with his expenses is less than the difference between the two prices at which he made his transactions. Again, it may happen that at a given time the quotations for wheat on the Minneapolis Chamber of Commerce and the Chicago Board of Trade may be "out of line," i. e. the difference between the two prices may be an unnatural one in view of the cost of transportation and handling which must be taken into account in moving grain from the one city to the other. In that case the arbitrageur, feeling sure that this unnatural difference must soon right itself, may buy a future in the low market, selling the same amount short for future delivery in the high market. Then, *if the two prices come together*, he can close out both of these transactions, and net as a profit the amount represented by the extent that the two prices have come together minus, of course, all expenses. Both transactions in the two markets were, in this case, purely speculative, and no grain was actually transported and delivered. Unlike the first case, the arbitrageur in this instance assumed a speculative risk because, if the prices had not come together or had widened still further, he would have suffered a loss. Moreover, the arbitrageur's opinion may have no reference whatever to the mere highness or lowness of the price; instead it is concerned with the difference between the two prices, irrespective of the general price level, because this may move up and down in the two markets without causing him a loss, provided the difference between the two prices does not widen.

A brief illustration may make this method of arbitraging clearer. Thus let us assume that on a given day in June the price of September wheat on the Minneapolis Chamber of Commerce is \$1.00 per bushel, and the price on the Chicago Board of Trade for the same wheat is \$1.04, and that an arbitrageur considers this difference of four cents too large and anticipates a coming together of the two prices. Accordingly he buys on a future contract in Minneapolis and sells short in Chicago at the prices indicated. Let us now suppose that in the course of a week the Minneapolis price rises to \$1.04 and the Chicago price to \$1.07½, and that the arbitrageur closes his transactions at these prices. By closing out his purchase in Minneapolis by a sale at \$1.04 he makes 4 cents; and by covering his short sale at Chicago by a purchase at \$1.07½ he loses 3½ cents, thus clearing a gross profit of ½ cent, ignoring

expenses, or an amount measured by the extent that the two prices came together. No matter what the fluctuations in the general price level of the two markets may be he will realize a profit from his transactions, provided the original difference of 4 cents between the prices is diminished.

In a manner similar to that just explained a person may arbitrage between two monthly delivery periods, such as September wheat and October wheat, by buying the low and selling the high, and reaping a profit depending again upon the extent that the two prices come together. The same practice may also be extended to two different grades of the same kind of grain, or to two different kinds of grain closely related to each other in so far as their use is concerned, if any unnatural difference in the prices is detected. Of course these arbitrageurs are after a profit, the "eights," which they seek to "shave" out of such deals. They serve, however, to bring the markets to a common level. Their very action—purchasing in the low market and selling in the high market—will itself tend to raise the one and lower the other, until the point is reached where the difference in the price prevailing in the two markets will again reflect the real commercial difference, representing cost of transportation, etc., between the two markets, that should really exist. Through their constant watchfulness all leading markets are kept "in line" with one another. Grain, like water, will seek its level. It will move from the center where it is plentiful to where it is not plentiful. Instead of chaos we are given a harmonious relationship between different markets between grades, between the several monthly delivery periods, and even between different kinds of grain.

#### X. HEDGING

It has already been explained that large produce exchanges give to producers and middlemen the benefits of insurance, (1) in furnishing a continuous market at all times where holders of grain or produce may immediately convert the same into cash, and (2) by enabling manufacturers to protect their trade profits by contracting for the future delivery of produce at definite prices. But of equal or even greater importance to the business community than the buying of produce for actual delivery at some desired future time is the common practice, adopted by all leading interests

in the grain, cotton and in provision markets, of "hedging" against loss through fluctuations in prices. This important function of organized exchanges, it should again be remembered, is made possible only through the existence, on the one hand, of the "future" contract and "short selling," and, on the other, of a speculative class operating in a large continuous market.

Hedging may be defined as the practice of making two contracts at about the same time of an opposite, though corresponding nature, the one in the *trade* market, and the other in the *speculative* market. A purchase in the actual grain market of a certain amount of grain at a certain price is promptly offset by a short sale in the speculative market on some large exchange of the same amount of grain for some convenient future month's delivery, with a view to cancelling any losses that might result from fluctuations in price. As soon, however, as the *trade* transaction is terminated by a sale, the speculative short sale must also be terminated, i. e. covered, by a purchase on the exchange. Both contracts are entered into at about the same time, and both must be terminated at about the same time if the hedger wishes to avoid speculation.

In explaining this process of hedging let us consider the needs of a grain dealer, who, for example, purchases 100,000 bushels of wheat in August at \$1.00 a bushel; and who, as is a customary practice, has made this purchase with borrowed funds to the extent of 90 per cent of the purchase price, the banker holding the grain paper as collateral for the loan. The banker is protected because he knows that at any time he can, owing to the existence of a large continuous market, sell out the buyer. But what shall we say of the grain dealer's risk? Is he not running a tremendous risk by buying so much wheat on a 10 per cent margin when in the course of a week or two, owing to world wide conditions over which he has no control, wheat may decline from 10 to 20 cents per bushel? If there were not some way in which he can insure himself against such a contingency it would be doubtful if our large elevator companies could remain in business for any length of time, especially with their trade profit, under present competitive conditions, limited to one or two cents per bushel. In fact the leading interests in the grain business have testified before Government Committees that hedging is absolutely necessary to enable them to continue in business, and here it may be repeated that a

hedging operation cannot be conducted without executing a short sale.

Now just as soon as this grain dealer purchases the wheat in the actual wheat market he at once gives an order to sell short on some exchange an equal amount in the speculative market for, let us say, September delivery. These two transactions are entirely distinct. The grain dealer does not intend to deliver the wheat he actually holds in fulfilment of this short sale. Now let us suppose that wheat rises to \$1.10 per bushel. In that case he has a profit of 10 cents per bushel on the wheat he owns, since he purchased it at \$1.00. But, as we have seen, the price of wheat is a world price made such by the operation of arbitrageurs, and there is every reason to believe that if the price of cash wheat rises 10 cents a bushel the September option will also have a rise of 10 cents, or approximately that amount. Since the grain dealer sold short an equal amount in the speculative market he suffers a loss on that transaction of 10 cents per bushel. The profit on his *trade* transaction is cancelled by his loss on the paper transaction. On the other hand, supposing that wheat declines 10 cents per bushel, the grain dealer loses 10 cents upon his trade wheat, but the 10 cents lost here will be cancelled by the 10 cent rise on the short transaction. In other words whether wheat should rise to \$2.00 per bushel or decline to 50 cents a bushel, this dealer is always even as regards the given market. Whatever he makes by price fluctuations on the wheat he holds is lost on his paper transaction and vice versa. If, when September arrives, he finds that circumstances are such as to make it necessary or desirable to hold his wheat longer, he may close out his September short sale in the speculative market and at once enter into another sale for a later month. This shifting of hedging transactions from one month to another month is a very common practice, although where the party interested is not the holder of a seat on the exchange, it involves accumulating commission charges.

The question will at once be asked, since the dealer is always even, how does he make his profit? Here we must distinguish clearly between the *trade profit* and the *speculative profit*. This grain dealer wishes to avoid speculative risks and therefore makes use of the speculative market for the purpose of hedging. His business consists in conveying his wheat, let us say, from Chicago



to New York, and it is in the handling and the transportation of the grain from this market to another market that he expects to make a *trade profit*, which is the result of his knowledge of the business and his ability to render this particular service in competition with other dealers. If we consult the financial page of our newspaper, it will be noticed for example that while September wheat is selling in Chicago on a given day at  $98\frac{1}{4}$  cents per bushel the same wheat is selling in New York at  $\$1.04\frac{1}{4}$  or at a difference of 6 cents a bushel. In all of the leading cities of the country, as already noticed, grain quotations on the same day will differ. But let us see what this difference of 6 cents includes. It will include, of course, transportation from Chicago to New York, cost of handling, etc., but among all the other items represented by this difference is the *profit* which those in the grain shipping business expect to make. They are in business to make this legitimate profit and it is reflected in the difference between the price in New York and the price prevailing at any leading distributing centers of the interior.

Now let us assume that wheat, which in Chicago was selling at  $98\frac{1}{4}$  cents and in New York at  $\$1.04\frac{1}{4}$ , declines 20 cents in Chicago, or to  $78\frac{1}{4}$  cents. As regards the wheat in Chicago we have seen that the holder cannot lose because he has hedged. Now other things being equal, the price of grain all over the country goes up and down together, fluctuations on the Chicago Board of Trade for example being reflected in the New York market in the course of a few minutes. In other words a 20 cent decline in Chicago will be reflected in New York, and if wheat in Chicago drops to  $78\frac{1}{4}$  cents, the price in New York, under normal conditions, and in view of our illustration, will be  $84\frac{1}{4}$  cents. Yet there is still the difference of 6 cents between the Chicago and New York quotations, and this difference still includes the trade profit. In other words the grain dealer by hedging has absolutely protected himself against speculative fluctuations, and, on the other hand, since the margin of difference between the quotations in different cities remains about the same he is still assured of his trade profit.

The explanation given here will apply differently in different industries to meet the needs of those who wish to use the exchange for hedging purposes. Thus if a manufacturer wishes to buy cotton from a commission man before the cotton crop has matured, this dealer, although he may not own the cotton, may nevertheless sell

1,000 bales of cotton short for December delivery at, let us say,  $11\frac{1}{2}$  cents. He probably charged  $11\frac{1}{2}$  cents because he knew that he could at once order his broker to buy 1,000 bales of cotton on the exchange at 11 cents a pound. He has thus added  $\frac{1}{2}$  cent to the price as covering all necessary expenses and his *trade profit*. In this case it will be noticed that the hedging operation is the reverse of our previous illustration, the speculative transaction being a purchase and the trade transaction a short sale. Now when the time comes for the dealer to deliver this cotton the price, owing to a severe drought, may have risen to 16 cents per pound. When the time for delivery arrives he will go into the actual cotton market and buy 1,000 bales at 16 cents per pound, and, having sold it at  $11\frac{1}{2}$  cents per pound, he is out  $4\frac{1}{2}$  cents. But at the time when he buys the cotton in the real market for delivery he orders his broker to close his transaction on the exchange by a sale of the 1,000 bales. Having bought on the exchange at 11 cents he now asks his broker to sell at 16 cents, and has a profit of 5 cents per pound. Having lost  $4\frac{1}{2}$  cents on the one transaction and made 5 cents on the other he has his one-half cent profit. It should be stated again that whenever the dealer closes his transaction in the actual market he must at once also close the corresponding transaction in the speculative market.

In the same way a manufacturer may be the holder of a large stock of finished cotton goods, or a miller of flour. He is unable to sell the goods and fears a decline in price. Possibly a large decline would compel him to sacrifice the greater part of his stock. Other things being equal, however, the price of the finished goods and the raw material out of which they are manufactured, will rise and fall together. In that case the manufacturer may hedge by holding the finished cloth or flour and selling short that amount of cotton or wheat which is necessary to make the goods he holds. Consequently if he loses on his finished goods because the price goes down, he will make about the equivalent amount on his short sale because cotton or wheat will also decline. Having sold short he will reap a profit on this sale, available at any time because of the existence of a continuous market.

Even the farmers, who as a class, are usually loudest in their complaints of the operation of the exchanges, are among the greatest gainers through the practice of hedging. As Mr. C. L.

Griesemer recently pointed out in an article on "Scientific Hedging": "Where the farmer wants to sell his crop all at once believing the present prices are too good to let get away from him, but has the grain all on his farm and asks for thirty days delivery or more, and the dealer who has been getting his business refuses to take it, unwilling to run the risk not knowing how to eliminate it, his competitor does, and by hedging shifts the risk to the speculator, assuring himself of the working profit which he is legitimately entitled to. Then again where a farmer is bullish, which seems to be a habit with most of them, he will haul it in early in the season and store it, sometimes paying storage but many times not. In some localities the man that refuses to store does not get very much grain to handle and the one that does would have something pretty large in the way of an elevator if he expected to hold all the grain and keep running. Instead of putting up a big structure that would never pay for itself, he keeps shipping that grain to market and as fast as it is sold protects himself and the farmers by taking on hedges. In this way he eliminates the shrinkage caused by drying and vermin and insurance and so forth that would result in case he kept the grain himself.

"Even so, some one will say, even when hedged a spread is liable to wipe out your profit. That is true, but then in how many kinds of business is every deal absolutely sure to make a profit. The thing to do is to find the method that will be the most likely to show up a credit rather than a debit. If all the dealers could influence their customers to make business conditions perfect, hedging would not be necessary, but every business man has to deal with nature which although it has been working toward perfection, is still some distance from the end of this process of evolution."

Were it not possible for large elevator companies and exporters to hedge their holdings of grain the farmer would be unable to dump his large crops, as at present, on the market within the three months of the crop moving season and receive cash therefor. No class of middlemen could be induced to take a year's harvest within so short a time and hold it for gradual distribution during the balance of the year; and if any cared to be such reckless gamblers it is doubtful if bankers would care to finance their operations. Without the hedging privilege elevator owners and grain dealers would be obliged to discount the enormous risk assumed in buying



large quantities of grain, and, to be on the safe side, would have to make allowance for the worst contingency anticipated by offering the farmer a much smaller price for his grain than is now given. It is generally maintained by the leading interests in the market that without the hedging privilege farmers would get an average price at least 10 per cent less than that prevailing to-day.

In insurance it is a well recognized principle that the substitution of *certainly* for *uncertainty* reduces the cost of practically all commodities by diminishing that part of the cost of production which producers and distributors must necessarily set aside as a fund for protection against risk; and just as the assumption of the fire hazard by large insurance companies can be shown to benefit both producer and consumer, so in the grain and cotton business the assumption of the risk of loss through price fluctuations by a group of speculators can be shown to benefit both producer and consumer. The producer of grain is given the highest price since he is not compelled to protect the buyer against the risk of loss through a decline in price while the buyer is compelled to hold the grain; and the consumer, likewise, and for the same reason, is given the lowest price. By throwing the burden of risk on the shoulders of a speculative class, grain dealers are assured a fair and legitimate trade profit, and, be it said, that in no class of commodities, known to the writer, is the margin of difference (for the middle-men) between the producer's price and the consumer's price so small as in those which are extensively dealt in on our large competitive exchange markets. Even the banker is vitally concerned in the additional safeguard which hedging gives to his loans on grain collateral. As pointed out in the recent report of the Commissioner of Corporations on "Cotton Exchanges": "This opportunity for hedging is, indeed, regarded by practically all cotton merchants as almost an absolute necessity in modern methods of conducting business. An idea of the value of the hedging function may be obtained when it is stated that in Great Britain banks very generally refuse to loan money on cotton which is not hedged. Moreover, it is almost universally conceded that, since the introduction of hedging, failures in the cotton trade, which had previously been frequent, have been materially reduced as the direct result of the greater stability with which transactions in spot cotton can be conducted."

Mr. David R. Forgan, president of the National City Bank of Chicago, recently made the statement that: "Warehouse receipts for grain, or anything else that finally becomes human food are, in my opinion, the best possible collateral for bank loans. I have seen the time more than once when high class stocks and bonds, and even government bonds, could not be readily sold, but I have never seen the time, nor do I ever expect to see it, when anything that has to be eaten could not be sold. The warehouse receipts therefore, above alluded to, constitute a collateral which is always available for the payment of debts. Furthermore, if the grain or provisions represented by warehouse receipts are already sold for future delivery, that fact adds a great element of strength to the loan, because there is a third party obligated to take the grain at a certain time for a given price. When I lived in Minneapolis I had the only unpleasant experience I have ever had in connection with the elevator business. A terminal elevator concern filled its elevators with wheat, and thinking that the market was likely to go up they did not 'hedge' it by selling for future delivery. In other words, they speculated on their wheat. The market, however, had a large and sudden drop, with the result that the elevator concern failed, and the bank with which I was connected made a loss. The present method, therefore, of carriers of grain or provisions selling them for future delivery is a highly satisfactory one to the banks whose money is loaned to the carriers. The sale for future delivery is the final link in the chain that makes such loans the best in the world."

In its essence, therefore, hedging is insurance against a real and ever-present hazard in business. Each leading produce exchange, such as the Chicago Board of Trade or the Minneapolis Chamber of Commerce, renders in this respect a function as legitimate and useful as our life and fire insurance companies; in fact they should be regarded as among the greatest insurance institutions in existence. Here a type of risk is underwritten so dangerous that no private insurance company has ever ventured to underwrite the same. For a holder of large amounts of grain and cotton not to enter the speculative market for hedging purposes is to be a speculator of the worst kind, yes a gambler. The risk of losing the customary small trade profit, and many times more than this, must be apparent when we reflect that each year's crop

is financed to 90 per cent of its value on borrowed funds, and that values often change within a week or two by many times the trade profit expected. The hazard is a dangerous one, and the chance of a heavy loss ratio many times greater than that connected with any other known form of insurance.

Legislators, who each year so glibly introduce bills to prohibit short selling, and express themselves so eloquently against the evils of speculation, should bear in mind that the practice of hedging, for the reason mentioned, is now almost universal in the grain and cotton trade. Evils exist to be sure, and many complaints are even heard from hedgers themselves about the faulty character of the type of contract used on certain exchanges. Thousands of innocent "lambs," also, are shorn each year for participating in a business about which they are woefully ignorant and which they are best qualified to leave entirely alone. These facts are to be regretted, and it is hoped will be remedied or diminished in time. A close examination, however, will show that these evils are either local in character and may be changed, or are unnecessary accompaniments to the operation of our organized markets as now constituted. They do not detract from the great functions of exchanges, and do not justify anything more than reform.

When denouncing speculation, short selling and exchanges in general, let us bear in mind that dealers and exporters hedge nearly all their sales, and that manufacturers, likewise, do so extensively. Over 90 per cent of the grain in the large western centers is thus protected on the exchanges of Chicago, Kansas City, Minneapolis, and St. Louis. Fully 90 per cent of the cotton shipped to Liverpool is hedged there or in New York and New Orleans. Nothing is so common as to see references made to the fact that on the Chicago Board of Trade the entire wheat crop of the country is sold several times over in a single year, and that most of the transactions must therefore be fictitious since they do not involve the actual delivery of the grain. But this large volume of transactions need cause no surprise when we reflect that the same grain, in passing from the farmer to the commission man, the elevator owner, exporter, and finally the miller, is sold against by each one of these interests. Many illustrations may be cited where the same grain, in passing from the farmer to the consumer, is hedged a half dozen times, and each hedging transaction involves

two deals, first a sale, and later a purchase. The volume of dealing on the Chicago Board of Trade is further increased by the common practice of transferring hedges from one month's delivery period to another when convenience makes this desirable, and each such transfer involves another sale, and later, when covered, a purchase. Then, too, the Chicago market, because of its size, is used extensively for hedging purposes by all the leading grain centers of Europe, and, it is said, even of Argentina.

#### XI. PRIVILEGES

"Privileges" afford another means of insurance, though of less importance in this respect than hedging. A "privilege" may be defined as a contract which gives the purchaser of the same the privilege of compelling the seller of the contract to deliver or to receive, as the case may be, a certain amount of produce at a certain price and within a definitely prescribed time. Frequently such contracts are known as "options." They are to be distinguished from "futures" in so far that the terms of the future contract must be complied with before the expiration of the last day of the month in which delivery is specified; while in the case of a privilege the purchaser of the same may exercise his discretion as to whether he wishes the contract to be fulfilled, i. e., under certain circumstances the buyer of a privilege may find it convenient to permit his option to lapse, whereas, under other circumstances he may find it advantageous to enforce the agreement against the seller.

Several forms of privileges exist, but only two need special mention, viz.: the "put" and the "call." The "put" gives the purchaser the right, in consideration of the premium paid, to make the seller of the same take from him a certain amount of produce at a certain price and within a stipulated time, provided he wishes to exercise this right. A "call," on the other hand, is just the reverse of the "put" and gives the purchaser of the same, in consideration of a premium paid, the privilege of compelling the seller to deliver to him within a definitely prescribed time a certain amount of produce at a stipulated price, provided he finds it advantageous to exercise this right. Occasionally, a third form of privilege is used, viz: the "straddle," which is simply a combination of the "put" and the "call" and which gives the buyer of the same the right to

make the seller either deliver to him, or take from him a certain amount of produce at a certain price and within a given time.

The "put" and the "call," it is clear, can be used to great advantage as a means of limiting losses. In actual practice, however, such agreements have been greatly abused, and have been used largely for betting purposes by those who have really no occasion to employ the same. Because of this fact some of the exchanges, and a considerable number of states have prohibited the use of such agreements. Test votes, however, among the members of some of the exchanges where such agreements are prohibited by state statute, show that their re-establishment in those markets is desired. In many instances where the law will not permit their use, members of the exchange frequently purchase the same by wire in another city. Thus Milwaukee is known as a market for such agreements, while in the New York stock market, most of the business in privileges is done in London, which is known as the greatest market for such agreements in the world.

The application of privileges to business transactions will be briefly described. The "put" may be used advantageously by speculators who own produce or securities which they are holding for a rise and which they wish to protect against a decline in price. Thus assuming wheat to be selling at \$1.00 per bushel, the holder of such wheat might purchase a "put," according to which the seller, in consideration of a premium of \$10.00 binds himself to take from the buyer within one month 10,000 bushels at, say, 97 cents per bushel. The terms of this agreement will vary according to the conditions prevailing in the market. Ordinarily the premium remains a constant, but the time during which the seller of the "put" is willing to take the grain and the price which he binds himself to pay for the same will be changed to meet market conditions. The price stipulated in the "put" is always below the market price, thus giving the seller a margin of safety. In the above illustration the price agreed on was 97 cents while wheat was selling at \$1.00 per bushel; hence the seller of the "put" knows that the buyer will have no inducement to exercise his privilege until wheat declines below 97 cents. If the price reaches a point lower than that agreed upon in the "put" the buyer, of course, will find it profitable to make the seller take the same. It is here that the "put" lends itself to betting purposes, because a speculator, although holding no grain,



may purchase this "put" anticipating a decline in the market. His loss is definitely limited, while if the decline in price should be extensive, he can enter the market and purchase the 10,000 bushels at the lower price and compel the seller of the put to take the same at the agreed higher price. Of course sellers of "puts" will use their best judgment in making the conditions of the agreement such as to net them a profit in the long run. The conditions stipulated in the "put" will depend upon the nature of the market, i. e., whether it is dull or wild, the nature of the produce under consideration, and the length of time during which the agreement runs. It is apparent that larger fluctuations will occur in a period of one month than within a period of one week, and that such fluctuations will also be greater during periods of great speculative excitement than during a dull season.

"Calls" should be serviceable chiefly to the short seller who, as we have seen, is an absolutely essential factor in the market, and who sells something which he does not own. Thus, if 10,000 bushels of wheat is sold short at \$1.00 per bushel, the short seller might purchase a "call" according to which the seller in consideration of a premium of \$10.00, will give the seller the right to make him deliver to the buyer 10,000 bushels of wheat within one month at \$1.03 per bushel. In this case the buyer of the "call" will not exercise the same unless wheat should rise higher than \$1.03. If this should happen he will limit his loss by exercising the call and receive the 10,000 bushels at the price of \$1.03. The seller of the call, it will be observed, has again fortified himself with a margin of 3 cents per bushel, i. e., the price at which he has agreed to deliver wheat is placed somewhat higher than the current market price. Of course, the seller of this call, as also the seller of the put, depend upon the continuous market for the operation of their business. If called upon to deliver the wheat the seller of the call may go into the market and buy the same, whereas if the seller of the put is made to take the wheat he, in turn, may at once go into the market and sell the same.

A sufficient explanation of the put and the call has been given to show that both may, under proper conditions, be used as a means of limiting losses. In the case of the put just described the purchaser has limited his loss to 3 cents per bushel or \$300.00 plus the premium of \$10.00. Similarly, in the case of the call just described

the purchaser cannot lose more than \$310.00, assuming the financial solvency of the seller. Should the price movement, however, result favorably to the purchaser of the put or the call, he may allow his profits to run, refusing to exercise his "privilege." In that case his loss in purchasing the privilege is limited to the premium paid. It should also be stated here that speculators frequently use the so-called "stop loss" order, another method of limiting losses, according to which an order is placed with a broker somewhat below or above the market, as the case may be, with instructions that if the price should reach the "stop loss" limit the order should be executed.



## METHODS OF MARKETING THE GRAIN CROP

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One of the most important and interesting branches of commercial activity in this country of great wealth and natural resources is that engaged in the marketing of the nation's grain crop, a task which each year taxes the country's financial resources. The effect of this annual movement upon the currency of the country is in itself a sufficiently complicated and important problem to merit extensive discussion. The volume of the exports of grain from this country to Europe, is still an important item in the make-up of our international balance sheet. Recognizing that this subject is too extensive to be included within the limitations of a single article, it is the purpose of this paper to deal only with the actual handling of the crop from its origin until it reaches its ultimate destination. Such a discussion must treat the conduct of the different divisions of the grain business, showing the function which each performs in the work of transporting the crop to the place where it is needed.

### *I. The Exchanges*

Inseparably linked with the conduct of the grain business, and forming the basis on which its success rests, are the grain exchanges or boards of trade, which exist in all the large markets of the country. These are so essential to the modern methods of marketing the crops that a knowledge of their organization and functions is necessary for a proper understanding of the grain business. We shall, therefore, first give a brief description of the work of the exchanges, and follow this with a discussion of the actual work of marketing the crop. As the Chicago Board of Trade is one of the oldest and the most important of the country's exchanges, and forms the basis for the organization of most of the others, a study of its rules will give a clear understanding of the conduct of these institutions.

The objects of the Board of Trade as stated in its rules are:  
"To maintain a Commercial Exchange; to promote uniformity in

the customs and usages of merchants; to inculcate principles of justice and equity in trade; to facilitate the speedy adjustment of business disputes; to acquire and to disseminate valuable commercial and economic information; and generally to secure to its members the benefits of co-operation in the furtherance of their legitimate business pursuits."

It is evident that the primary object for which the Exchange exists is to form a great market where buyers and sellers can come together and transact business. It should be borne in mind that the Exchange itself does not in any way deal in commodities, but confines its work to fixing and enforcing the rules governing buyers and sellers. The establishment of rules to promote uniformity of customs and usages is a very important function of the Exchange. The grain business is one which involves the transfer of money upon oral contracts, and it is essential that there should be uniform customs in regard to the performance of such contracts, in order to prevent confusion and possible fraud. Contracts for purchases and sales of grain are made orally upon the Exchange by members, and recorded upon trading cards, which show the name of the person with whom the transaction is made, the amount of grain bought or sold, the grade to be delivered, the month of delivery, and the price. No evidence of the contract is exchanged between the buyer and seller at the time of the sale. At the close of business each member has upon his trading card a record of the transactions which he made during the course of the day. Although there is no evidence of the contract exchanged between the parties at the time it is made, the Chicago Board of Trade rules provide for the written confirmation of purchases and sales at the close of the day's trading. Each party to a transaction for future delivery is required to send to the Clearing House a memorandum containing the date of the transaction, the amount and kind of grain, the month of delivery, the price, and the name of the person with whom the deal was made. The Clearing House distributes these to the other parties to the transactions, by whom they are held as confirmations of the trades made. By this method the Exchange secures a uniform system of making contracts without the formality and delay which would attend the exchange of written contracts at the time of the sale.

Among the other rules governing the making of contracts, is the

prohibition of all trading outside of hours, under penalty of suspension. The object of this rule is to confine all trading which may tend to the maintenance of a public market within the hours specified. The rules also prohibit the making of contracts in which any money consideration is added to or deducted from the contract price. The purpose of this prohibition is to prevent the creation of a fictitious price. It is similar in its intent to the ban which is placed upon "washed" sales by the stock exchanges.

After a transaction has been made, all contracts for future delivery become subject to the rule regulating margins. This is an important factor in all future contracts. The margin rule provides that at the time the transaction is made the purchaser may demand from the seller, as security for the performance of the contract, a ten per cent margin, based on the contract price, and additional security from time to time to the extent of any advance over such contract price. The seller may require a ten per cent margin from the purchaser at the time of sale, and additional security to the extent of any decline below the contract price. For example: A sells to B 10,000 bushels of May wheat at \$1.00 per bushel, or \$10,000. At this point B, the purchaser, may demand from A, the seller, a deposit of 10 per cent of the contract price, or \$1,000, as marginal security. At the same time, A, the seller, may demand an equal margin from B. Now, suppose that the market price of May wheat advances to \$1.02 per bushel. B, the purchaser, according to the rule, may demand an additional margin of 2 cents per bushel, or \$200 from A. On the other hand, suppose that the price of May wheat drops to 97 cents per bushel. A, the seller, may then demand an additional margin of 3 cents per bushel or \$300 from B.

These margin deposits must be made in certain designated depositories. In Chicago they may be made either with the treasurer of the Exchange Clearing House or in banks which have been named as depositories by the directors of the Board of Trade. Before a bank is accepted as an authorized depository it is required that at least one of its chief executive officers shall be a member of the Exchange, and so answerable to its rules in matters under dispute concerning deposits. When a margin call is made, the sum called for must be deposited within the next banking hour. If this is not done the person making the call may repurchase or resell, as the case may be, and charge the difference between the

contract price and the price at which the property is repurchased or resold as the measure of damages. In the case given above where the price rose to \$1.02 per bushel, and B demanded a deposit of \$200, if A had neglected to make such deposit, B might have gone upon the Exchange and repurchased the property at \$1.02 per bushel, charging against A, as the measure of damages, the difference between the contract price, \$10,000, and the repurchasing price, \$10,200, or \$200. In this way B's profit is protected.

When margin deposits are accepted by a bank a receipt is given the depositor, stating the name of the depository bank, the date, the name of the depositor, the amount of the deposit, and the name of the party in whose favor it is made. If the difference between the contract price and the market price narrows, the depositor may demand the return of a ratable proportion of his deposit. To continue the case given above, if the price subsequently declined to \$1.01 per bushel, A might demand the return of \$100 of his margin deposit.

The actual practice of calling cash margins in grain transactions, as in the case of margin calls on stocks, depends largely upon the financial responsibility of the parties. In many trades between members, where each is perfectly confident of the other's financial stability, the calling of margins is unnecessary, and is often disregarded. The contract is allowed to run with very little attention paid to this matter. On the other hand, where the parties to the deal are not so responsible, margins are frequently called; and in the event of violent fluctuations in prices, may result in financial difficulties for the concern which is called upon to make the deposits. When a member of the Exchange makes contracts for the account of an outside party it is customary to call upon the latter for the initial deposit of ten per cent and require him to keep this deposit good. The calling of margins does not depend upon any set rule, but is determined by the parties to each individual transaction.

The fulfilment of all contracts, or delivery upon contracts, as it is called, is made by the tender of regular warehouse receipts for grain, unless otherwise expressly provided for. The receipt states the name of the elevator company issuing it, the date of issue, the kind and amount of grain, and the name of the owner. All the receipts issued by an elevator must be consecutively numbered in

order to avoid confusion. The receipts are negotiable and pass by endorsement. Upon presentation of the receipt, properly endorsed, to the elevator company the grain will be delivered. Only receipts issued by warehouses which have been declared "regular" by the directors of the Exchange are valid deliveries upon contracts. In order to be declared regular an elevator must be easily approachable by vessels, have customary shipping facilities, uniform storage rates, and the proprietors must be in good financial standing. Although the rules require that delivery be made by warehouse receipts, the actual receipts are not passed from hand to hand by endorsement. This necessity is obviated by allowing the seller to issue a Delivery Notice, in which he notifies the buyer of his readiness to deliver certain warehouse receipts in fulfillment of his contract. This notice is passed from seller to buyer by endorsement, and constitutes a valid tender upon contracts.

The previous description is intended to give an understanding of the principal functions of the Exchange, the methods by which contracts are made, the practice of giving margins, and the manner in which delivery is made upon contracts. After this preliminary explanation of the manner in which transactions are made, it is now possible to examine the different divisions of the grain business with the purpose of analyzing the functions performed by each in the marketing of the crop.

## *II. Country Elevators*

The first division of grain marketing concerns consists of those whose operations center in the country, with close affiliations in the primary markets. It is their function to secure control of the grain in the country, supervise its transportation to the primary markets, and dispose of it there. There are three kinds of concerns which secure control of the grain from the farmer at country points, viz., the Line Elevator Company, the Farmers' Elevator Company, and the independent dealers. The methods by which these concerns carry on operations vary somewhat, but the business of all three is similar, in that it consists of the purchase of grain from the farmer, the storage of the grain in the country elevator, and shipment to the primary market.

The Line Elevator Company has its headquarters in the primary market and operates a large number of country elevators along

some line or lines of railroad. At each one of these country elevators grain is purchased from the farmers, and cash paid for it. The grain is taken into the elevator and held there temporarily. As it accumulates it is loaded into cars and shipped to the primary market. Some of these Line companies operate elevators through Minnesota, North Dakota, and South Dakota. The grain is shipped either to Minneapolis or Duluth, depending upon the freight rate to those cities from the country point.

In figuring the country price, the elevator company deducts from the primary market price the cost of freight plus 3 cents for wheat, freight plus 5 or 6 cents for flax, and freight plus  $1\frac{1}{2}$  to  $2\frac{1}{2}$  cents for coarse grains, such as corn and oats. These figures may vary somewhat, but are sufficiently accurate for most purposes. The difference in the margin which the company allows itself on different grains is due to the degree of risk assumed. The chance of loss in handling flax for example, through fluctuations in price, or deterioration in quality, is greater than that of other grains, hence a margin of 5 or 6 cents per bushel is allowed. As an example of the way in which the country price is fixed, let us take a town in Minnesota with the freight rate to Minneapolis 5 cents per bushel, and the margin of the elevator company for handling wheat 3 cents per bushel. The country price will be 8 cents less than the price in Minneapolis.

In determining the grade of the wheat in the country for which the farmer is paid, individual judgment is an important factor. Owing to the competition for grain at country points, there is a tendency for the buyer to allow as high a grade as possible on it, in order to secure it from the farmer. For this reason the farmer gets the full benefit of proper grading; in fact, it is the testimony of men in the Line elevator business, that grain seldom grades higher in the primary market than in the country, but more often the grade is lower.

The Line Elevator Company sends out by mail daily to its country elevators lists of prices to be paid for all grades of wheat, flax, barley, oats and other grains. If there are sudden fluctuations in the market, say of  $1\frac{1}{2}$  or 2 cents per bushel, the Line Company wires price changes to conform with the new primary market prices. In either case the price given to the country houses holds good until the agents are notified of changes.



The methods used by the Line Elevator companies in fixing country prices are substantially identical with those of its competitors in the country, so in dealing with the latter these explanations need not be repeated. In every case, the method pursued is to pay such a price in the country that, after adding freight and other costs, the grain may be sold in the primary market with a fair profit. The disposition of the grain when it reaches the primary market will be explained later.

The competitors of the Line Elevator Company in the country are the Farmers' Elevator Company and the independent dealer. The Farmers' Elevator Company is an association of farmers which owns and operates a country elevator. Its business consists in purchasing grain from the farmers, storing it, and shipping it to the primary markets like the Line Elevator Company. The disposition of the grain in the primary market differs somewhat, as the Line Company handles this itself, while the Farmers' Elevator Company employs a commission man. The apparent advantage of the Farmers' Elevator Company over the Line Company consists in its ability to get control of the grain in the country. Naturally, the farmers who hold stock in the company will sell their grain to it in preference to the Line Company, inasmuch as the profits of the concern depend upon the amount of grain handled, and they, as stockholders, are participants in the profits. At one country station there may be four or five Line elevators owned by different companies, and one Farmers' elevator, owned by the farmers of that vicinity. The Farmers' elevator will probably secure from a half to a third of the grain shipped from that station, due to the advantage just explained. Its cost of operation will be very little more than that of each Line elevator. It is apparent therefore, that the Farmers' elevator, handling a much larger quantity of grain at approximately the same expense, does business at a considerably lower cost per bushel than the Line Company. As the country builds up and the farmers become more prosperous there is a tendency for them to supply the capital for country elevators and handle their own grain in this way. It is the opinion of many men in the grain business that the Line Elevator Company is a pioneer institution, fitted only for a new country where capital is scarce, and unable to withstand the competition of the Farmers' Elevator Company.



In reply to a communication upon this subject, Mr. L. H. Squire, president of the North Dakota branch of the American Society of Equity, an organization whose purpose is to secure profitable prices for farm products, writes as follows:

The Farmers' elevators in the past few years have been rapidly increasing, so much so that every county and most towns of any size (in North Dakota) have one. The Society of Equity is making one of its principal objects that of incorporating Equity elevators throughout the state, that the farmers may handle their grain at home. . . . At this very moment (February, 1911) we have perhaps in the neighborhood of twenty-five over the state which are being organized. We predict that in a few years all the grain from this state will be handled through the institutions which are owned and controlled by the farmers exclusively.

A strong confirmation of this view is contained in a letter from Mr. Henry Feig, Supervising Inspector of Country Elevators for the State of Minnesota, who writes:

"There has been a very perceptible increase in the number of Farmers' elevators in this state (Minnesota) during the last five years, and a correspondingly large decrease in the number of Line houses. . . . As to the future of Farmers' and Line houses, I believe there is no doubt that the latter will decrease and the former increase in number." The figures showing the changes during the past five years follow:

TABLE SHOWING TOTAL NUMBER OF LOCAL WAREHOUSES IN OPERATION IN THE STATE OF MINNESOTA FOR FIVE YEARS.

Style of Elevator	1906	1907	1908	1909	1910
Line houses .....	1199	1171	1007	971	871
Independent houses .....	381	377	430	405	363
Farmers' houses .....	151	168	178	205	224
Total.....	1731	1716	1615	1581	1458

The independent dealers are individuals who own single elevators at some country point. Their business is identical in nature with that of the Farmers' elevator. Where there are Line elevators and an independent dealer at the same point the farmers seem inclined to favor the latter, as he is regarded as a competitive force in sustaining prices. The independent dealer, like the Farmers' Elevator Company, disposes of his grain in the primary market through the service of a commission man.

These three concerns, then, the Line Elevator Company, the

Farmers' Elevator Company, and the independent dealer constitute the country end of the grain business. It is their function to secure the grain from the producer and start it upon its journey to the ultimate consumer. The second stage in that journey is the concentration of the grain in the primary markets.

### *III. The Primary Market*

After the grain has been shipped from the country elevator it must be disposed of in the primary market. The Line Elevator Company does this by selling the grain on the floor of the Exchange through its own representative. The Farmers' elevator and the independent dealer sell on the Exchange through a commission man. In both cases the grain is sold to the big Terminal Elevator companies or to millers. The methods used by the Line companies and those of the commission man in selling to the Terminal Elevator Company are very similar and will be treated as one.

There are various contracts which can be used in disposing of the grain to the Terminal Elevator Company. One of these is the "to arrive" contract, by which the country elevator concern is required to deliver the grain within fifteen days. This is used to a large extent by all three classes of country dealers. The Line Elevator Company which has a considerable quantity of grain in its country elevators can sell "round lots" of grain "to arrive." These are sales of from ten to a hundred thousand bushels. The grain is then shipped out from the country elevators, and as it arrives in the primary market is applied on the "to arrive" contract. In this way the Line Company saves the work of selling each individual car load on its arrival.

The Farmers' Elevator Company and the independent dealer also use the "to arrive" contract to a large extent. When there is a bulge in the cash price of grain in the primary market, the "to arrive" price rises simultaneously, and a common way of taking advantage of this advance is to notify their commission man to sell a certain amount of grain "to arrive." The grain is then loaded out of the country elevator and shipped to the primary market to fill the contract. A subsequent decline in prices during the time of transit will not affect the country dealer, since his grain is already disposed of.

The second method of selling grain in the primary market, commonly used by the country concerns, is the "on track" sale. The grain is shipped from the country elevator unsold. Upon its arrival in the primary market it is sold by car lots to the Terminal Elevator Company; in the case of the Line Company through its representative, and in the case of the Farmers' elevator and independent dealer through a commission man.

At the time the "on track" sale is made the seller gives the car numbers to the Terminal Elevator Company, and orders the railroad to switch the cars to the elevator company's warehouse. The unloading at the elevator is done under the supervision of the state, and the weighing of the grain is done by a state official. On the basis of these weights the seller makes out his bill and presents it to the Terminal Elevator Company for payment. In the case of such sales by a commission man for a Farmers' Elevator Company or an independent dealer the following Account of Sales is rendered:

Folio..... Duluth, Minn.,..... 191..  
 Account Sales by COMMISSION DEPARTMENT,  
 For Account of.....

Car	Initials	Contents		Date of Sale	Gross Weight	Dockage	Net Bushels	Price	Amount
		Grade	Dock-age						
		Freight, Inspection and Weighing, Switching Trackage Reinspection Storage Insurance Commission							
		Days Interest at      per cent.							
		Net Proceeds							
		Advanced							
		"							
		"							
E. &	O. E.	Balance							
							TOTAL CHARGES		

For his services the commission man receives a straight commission of so much per bushel; in the case of wheat, 1 cent. The amount of this profit depends upon the volume of business which he can command. This is secured by means of agents, who are sent out by the commission man to solicit shipments from Farmers' Elevator companies and independent dealers. It is by means of this personal solicitation, and by giving satisfactory service, that the commission man secures his business.

In this connection the credit relationship existing between the commission man and those for whom he deals should be explained. When the Farmers' Elevator Company and the independent dealer ship grain from their country elevators they cannot wait until it arrives at the primary market to receive the proceeds, because their limited capital is needed to purchase more grain. In this connection the commission man renders them a valuable service by furnishing them with credit. When the grain is shipped, the country concern takes the bill of lading and attaches to it a draft drawn against the commission man. Upon depositing this in the country bank the country dealer receives credit with which he may buy more grain. In a reasonably stable market the commission man will permit the country dealer to draw against him up to 90 per cent of the value of the grain shipped.

In addition to this means of supplying credit some commission firms advance money to country shippers upon an open account. An arrangement is made by which the latter may draw upon the commission firm up to a certain amount without depositing bills of lading or any collateral. The reason back of this is that country shippers sometimes find it impossible to secure cars to ship out grain held in the elevator. Their own capital becomes tied up, and money is needed to buy the grain which the farmers are bringing in. In such an emergency the capital of the commission man is advanced to satisfy temporary needs. The amount which is advanced depends upon the financial standing of the country shipper. When the grain finally arrives in the primary market and is sold the advances by draft or otherwise are, of course, deducted in making the settlement. It is to this that the item "advanced" in the Account of Sales refers.

Another method of disposing of grain used by the country concern besides the "to arrive" and "on track" sale, is the selling

of grain "in store." Upon the arrival of the grain in the primary market it is not immediately sold to the Terminal Elevator Company in this case, but is stored in the elevator for the account of the country owner. All public elevators are required to accept grain for storage as long as any room remains, and the Farmers' Elevator Company or independent dealer can keep his grain here as long as the storage charges are paid. The purpose of this is to await more favorable conditions for marketing the grain. When the owner desires to sell, the grain is disposed of by the commission man, who sells it "in store." Delivery is made by endorsing the elevator receipt to the purchaser. This method of storing grain by country interests is more in use in Canada than in this country. Here the "to arrive" and "on track" sales are commonly used.

Thus far we have discussed the first stage in the handling of the grain crop, viz., its concentration in the primary market from the country district through the medium of the Line Elevator Company, the Farmers' Elevator Company, the independent dealer, and the commission man. A part of the grain which is received in primary markets is sold to millers for local use. In a market such as Minneapolis, which is a great milling center, the bulk of the wheat received is used for this purpose. In such markets as Chicago and Duluth, however, most of the grain is taken by the large Terminal Elevator companies.

The Terminal Elevator Company derives its profit mainly from the storing and mixing of grain. Every public elevator of this kind must receive grain for storage up to its capacity, at certain uniform rates. In addition to the storage of grain for others the Terminal Elevator Company purchases large amounts from country shippers as previously described, and stores this until it is ready to re-sell.

The difference between the prices of two options such as December wheat and May wheat, should theoretically represent the carrying charges from December until May, that is interest upon the money tied up, insurance premiums, cost of handling grain, and a fair profit. The normal difference between December and May wheat is about 4 or 5 cents per bushel. This means that the Terminal Elevator Company can purchase December wheat, and sell May wheat for 4 or 5 cents more per bushel. The wheat purchased is carried until May, when it is delivered upon the contract.

Or, when May arrives, if the price of July wheat is high enough, instead of delivering the actual grain upon its May contracts, the company can buy May wheat to cover its contracts, and sell July. The actual grain is then held until July, when it is delivered. This is known as shifting hedges from one delivery month to another.

This difference in the prices of various deliveries does not always exist as assumed above, because of the interference of outside factors. For instance, December wheat may sell on a par with May wheat because of a shortage of supply at terminal points and a heavy cash demand for milling use. The amount of grain in store is one of the most important factors in determining the price. Obviously, the Terminal Elevator Company must take these things into consideration in deciding whether it will be profitable to buy grain for storage.

In addition to the storage service, Terminal Elevator companies derive large profits from mixing grain. This is made possible by the existence of an "in-inspection" when the grain is bought and taken into the elevator, and an "out-inspection," when the grain is sold and loaded out. The elevator company buys the grain on the basis of the "in-inspection," mixes it in the elevator, and sells it on the basis of the "out-inspection." It is often possible, by the judicious mixture of some number one wheat with some number two, to secure a product which will grade number one under the "out-inspection." This, of course, applies to other grades and kinds of grain, and explains how the elevator company is sometimes enabled to make large profits by this process. This mixing of grain for the purpose of raising the grade is practiced extensively, and is considered perfectly legitimate with the following limitations:

Stored grain, that is, grain which does not belong to the elevator company holding it, may not be mixed unless this is done at the request and with the authority of the owner of the grain, and in the latter case it would have to be stored in special bins in order to preserve its identity. The mixing of grain belonging to outside parties by an elevator company in order that the latter may make a profit for itself, is strictly prohibited under severe penalty.

There is, however, in private terminal elevators, a great deal of mixing of grain which has been purchased from farmers and which



belongs to the elevator company mixing it. In writing of this practice, Mr. Feig, previously quoted, says: "The mixing of grain in this manner is a benefit not only to those who mix the same, but it reflects itself back to the producer of low grade or 'no grade' grain. The process of mixing and cleaning makes it possible to raise the value of low grade or no grade grain." In other words the elevator man, knowing that he can mix this low grade grain with a better quality and get a marketable product, is willing to pay a fair price for it. In the absence of this practice he would have no use for the low grade grain, and the farmer would be unable to dispose of it. This is what Mr. Feig means when he says that the benefit from this process "reflects itself back to the producer of low grade grain."

The Terminal Elevator Company is a large borrower from the banks because of the nature of its business. It buys large quantities of grain as the cereal comes into the market, and is often compelled to carry this for considerable periods. In order to procure capital for this it deposits with the banks, as collateral for loans, elevator receipts for the grain. Owing to the very stringent rules under which the issuance of these is governed, as previously explained, they make very safe collateral, and in a stable market bankers will loan as high as 90 per cent upon them. As the grain is sold the loans are paid off, and the receipts are surrendered by the bank. The Terminal Elevator Company also borrows on its unsecured notes. It is apparent that in all the steps of moving the crop the bank performs an indispensable function.

The Terminal Elevator Company sells the grain to the exporter or shipper of grain. In some cases the sale is made to exporters located in the primary markets and in other cases to exporters in the seaboard markets. As the primary markets are under discussion now, the exporters operating there will be treated first.

The exporter purchases the grain in the elevator and holds it until he has an opportunity to sell. When he sells the grain abroad or for eastern shipment it is loaded out of the elevator into boats or cars as the case may be. In shipment from Duluth and Chicago the bulk of the grain goes by water to Buffalo, and from there to seaboard points. When the shipment is made, the shipper secures a bill of lading from the vessel company, places insurance on the

cargo, and draws a draft against the consignee. This is deposited in the bank and credited to the account of the shipper.

In Duluth, owing to the cheapness of water transportation, many contracts for shipment on the "opening of navigation" are made during the winter. These call for the shipment of grain ten days after navigation is opened in the spring. The opening of navigation is determined by the arrival of the first boat from lower lake ports.

On grain shipments from primary markets by water the grain is discharged into elevators at Buffalo and reloaded for shipment to New York or Philadelphia for export. Exporters in Duluth and Chicago have representatives in the seaboard markets who look after their shipments through those points. The details of the export business, including the sale of the grain abroad and the ocean transportation, will be treated later in connection with the seaboard markets, as the methods of the primary market and seaboard exporters are identical in most respects.

#### *IV. Hedging*

The preceding sections of this paper have been devoted to a discussion of those branches of the grain business which center in and are dependent upon the primary markets. Before considering the grain business in its relation to the seaboard markets, there is one point to be discussed which vitally affects all phases of the grain business. The importance of this will be understood in its application to the businesses previously described. This is the use of the future contract as the basis of hedging operations.

A "hedge" is the purchase or sale of grain usually for future delivery, by a grain dealer or miller, made for the purpose of protecting himself from loss through fluctuations in price. It is extensively used in every one of the businesses previously dealt with, and is essential to their safe operation. The "hedge" works out somewhat as follows: When the country elevator concern buys grain from the farmer it cannot resell that grain immediately for cash. The grain must be stored until a sufficient quantity is received for shipment, and then loaded out and sent to the primary market. This requires considerable time, during which the price of the grain on the primary market may have materially declined. In such a case unless the country concern had some means of

protection, it would suffer a loss during the time that the grain was in transit.

The country concern is in the business of buying, storing, and shipping grain for a legitimate trade profit. It desires to eliminate speculative risks from its business. This is done by hedging. If, for instance, the country concern has bought 10,000 bushels cash wheat from farmers at a price which is equivalent to \$1.00 in the primary market, it sells on the primary Exchange an equivalent amount of some "future," say 10,000 bushels May wheat at \$1.06 per bushel. As soon as cars are received the grain is shipped to the primary market and sold at the current market price. In case the cash price has declined to 98 cents per bushel a loss of 2 cents per bushel has been sustained upon the actual grain held. It is extremely likely, however, that the price of May wheat will have declined simultaneously, due to the same causes which forced down the price of cash grain. Assuming that the price of May wheat has dropped to \$1.04, the country dealer buys in 10,000 May at this price to cover his short sale. Having sold at \$1.06 and bought at \$1.04 his profit on this transaction is 2 cents per bushel, or the same as the loss which he sustained upon the cash grain. As previously shown his trade profit is included in the difference between the country price and the primary market price of the actual grain.

\* This practice of hedging purchases of grain is universally used by country elevator concerns. The Line Elevator Company does its own hedging in the primary markets, while the Farmers' Elevator Company and independent dealers use the services of the commission man. So essential is this practice to the safe operation of the business that many commission men, who advance credit to country dealers, insist that the latter keep their purchases properly hedged. The reason for this is identical with that which prompts Southern bankers to refuse loans on shipments of unsold cotton unless the cotton is hedged.

But the country elevator company is only one of the many classes of grain dealers using the hedging transaction. The Terminal Elevator Company buys grain and stores it in its elevators awaiting a market for it. Large quantities of grain may have to be held until there is an export or milling demand for it. In the meantime the company might be subjected to heavy losses through a

decline in prices. It is true that its profits would be equally large in case of a rise in the price, but it should be remembered that the company is not in the business of speculation; it is engaged in the business of storing and mixing grain. It is for this reason that the Terminal Elevator Company hedges by the sale of futures, in identically the same fashion as the country elevator concern.

The "hedge" is also universally used by the flour miller, again with the intention of avoiding speculative losses. In this case the "future" is purchased to cover sales of flour in advance. In a letter referring to the subject of the hedging of flour sales by millers, Mr. A. D. Goodman, president of the Minnesota Millers' Association writes:

All millers who run their mills absolutely free from speculation, keep all their flour sales, either for future delivery or otherwise, hedged all the time, either with cash wheat or the option. The miller who is doing a legitimate milling business should never be long or short on the market to exceed one thousand bushels of wheat.

Millers sell flour for future delivery any place from sixty days to six months ahead. The future sales must be protected either by purchasing cash wheat or the option. It would cost altogether too much to buy the cash wheat for all future flour sales and carry it six months; therefore, the options are largely used as a protection against future flour sales.

The miller who makes the money year in and year out is the miller who makes the money out of his flour mill—that is, the minute he makes a flour sale he "cinches" his profit right there by buying the cash wheat, or option to protect the sale. Then it does not make any difference if wheat goes up twenty cents per bushel or down twenty cents per bushel.

The miller who runs his mill by speculation, in the end falls by the way-side. It occurs to me that trading in futures is absolutely necessary for a miller if he wishes to run his business free from speculation.

The method of hedging used by the miller is approximately this: Suppose, for example, that a miller sells in October 10,000 barrels of flour for January delivery, basing his price upon the present price of December wheat. He immediately purchases enough December wheat to fill the contract, in this case about 45,000 bushels. Sometime during the month of December he will receive the wheat upon his contract, paying for it at the price fixed in October, irrespective of any subsequent changes in the price. The wheat is ground and the flour delivered in January; the miller has made his legitimate milling profit and avoided speculation.

The final use made of the hedging transaction in the handling

of the crop is by the exporter. He, like the Terminal Elevator Company, is often compelled to purchase large quantities of grain and hold it. Mr. Julius H. Barnes, a prominent exporter, doing business in Duluth, Winnipeg, and New York, and a former president of the Duluth Board of Trade, writes as follows on this point:

From an export or milling standpoint you cannot always buy the grain you need in the exact position desired; it must be bought when there, and, perhaps, at that moment foreign markets or domestic flour markets are not in line to buy the product the same day; in which case we use the hedge in the market to guard against any material fluctuation in the price basis while we are awaiting a market for the actual wheat. As a rule these hedges would be placed as far off as possible, because in normal markets the far-off hedges can usually be sold at a premium over the cash price, thus in a measure getting back, the expense of storing, insurance, and interest.

In view of the universal use of the hedging transaction by all members of the grain trade, invariably for the purpose of avoiding speculation, it is difficult to understand how the legitimacy of future trading in this connection can be questioned. The hedging transaction implies, it is true, that there is always some individual ready to take the other end of the future contract. If an exporter or an elevator company is to sell a future short for purposes of hedging, someone must be willing to buy that future. That is made possible to a large extent by the existence of a group of professional speculators, who are ready to buy or sell grain at a price determined by their individual and combined judgments.

These men make it their business to study all conditions affecting prices, weigh them carefully, and base their operations upon the information obtained. They, as speculators, are willing to carry the risk which the legitimate grain trading concern does not wish to assume. The speculator is in business for a speculative profit; the trading concern is in business for a trade profit. Prices must fluctuate due to constantly changing conditions of supply and demand. The question is whether it is better to allow the professional speculator to assume the speculative risk, or to force that risk upon the legitimate trading concern by the prohibition of future contracts.

The assumption of this risk by the speculator is simply a financial underwriting or insurance. The fire insurance company assumes the risk of loss by fire which a business man does not want



to carry; the speculator assumes the risk of loss through price fluctuations which the grain concern does not wish to carry. There is no gambling, no creation of a new risk, but merely the transfer of the risk from one party to another.

In this connection it is pertinent to state, that in the absence of hedging, everyone in the grain business from country elevator company to exporter would undoubtedly demand a greater margin of profit on account of the increased risk. It is a fundamental rule in business that the greater the risk, the greater is the margin of profit required. The result would inevitably be either a rise in the price paid by the ultimate consumer or a fall in the price paid to the farmer. In Germany, where futures were prohibited for several years the result was a heavy fall in the price which the farmers received for their grain. As a result future trading was restored, largely through the instance of the agricultural interests. It is practically the unanimous opinion of men intimately connected with the grain trade that the abolition of future trading, which implies the elimination of hedging, would result in the farmer receiving less for his grain. Mr. Barnes says in regard to this matter:

There is no doubt that without the protection of these hedging transactions which enable a large volume of business to be done along a small margin, every one handling grain would require a larger margin of safety, and this in the end would come out of the grower.

Mr. A. D. Goodman, previously quoted in this article, is of the same opinion. He says:

If trading in futures were eliminated in this country, the farmer would surely have to take from five to twenty cents per bushel less for his wheat.

The logical deduction from all these facts seems to be that, as there is a speculative risk which must be carried by someone in the marketing of the crop, and as the legitimate grain dealer and the farmer both wish to avoid this risk, it should be shifted onto the shoulders of those who are willing to take it. This is done by means of the hedging transaction.

#### *V. Seaboard Markets*

A previous description has been given of those divisions of the grain business which center in the primary market, having their basis of operations at that point. Their functions, as explained, are



to secure the concentration of the grain in those markets, and to start on its journey to the eastern states or for export, such a portion of the crop as is not used for local consumption.

In addition to these dealers a second division may be made, consisting of grain concerns which are located in the seaboard markets. Their work, generally speaking, consists in distributing the grain among the various localities in the East, and secondly in the exportation of grain. Although a few concerns engage in both of these branches of business, most of them confine their attention to one branch only, either distributing or exporting. The business of the distributor will be considered first.

This distributing grain dealer draws his supplies mainly from primary markets, buying from large elevator concerns through a broker on the floor of the seaboard exchange. Philadelphia may be taken as an example of this. Certain brokers upon the Philadelphia Bourse represent large terminal elevator companies in Chicago and other concentrating points. They keep on hand samples of the standard grade of corn, oats, and other grains handled by that elevator house. In the morning before the opening of the Exchange, and also throughout the day, the broker receives wires from the elevator company offering certain amounts of grain at specified prices. The broker then makes these offers to the distributing dealers on the Exchange on behalf of the elevator company. Acceptances are immediately wired back to the elevator company giving the name of the purchaser and the shipping directions. For his services the broker receives a commission from the elevator company. This is usually one-eighth cent per bushel, although in some cases it is larger. The wire expense is borne by the broker.

The Philadelphia grain dealer who purchases the grain has it shipped to some diverting point on the railroad, expecting to resell it during transit and forward it to its ultimate destination. At the time of shipment the elevator company draws a draft upon the Philadelphia dealer, based on the amount and grade shipped, and the price agreed upon. The draft with bill of lading attached is forwarded to Philadelphia, accepted by the grain dealer, and the bill of lading made out to the diverting point is turned over to him.

The grain dealer sells this grain through the East to millers and local grain and feed men. He accomplishes this by means of salesmen who are sent out to make offers and solicit business from

the local dealers. In addition to his salesmen the grain dealer sends out by mail a daily card containing offers of grain at certain points. This is received by prospective purchasers in the morning, and acceptances may be wired in before the opening of the Exchange.

When the grain is resold by the Philadelphia dealer he endorses the bill of lading in his possession to the final destination, so that the car of grain is forwarded from the diverting point on the railroad. At the same time he draws a draft upon the purchaser, and deposits it with the bill of lading in his bank, receiving credit for the amount of the sale. The profit of the Philadelphia dealer is included in the difference between his buying and selling prices.

The exporter in the seaboard market buys his grain largely in the primary markets in much the same way as the distributing dealer. His purchases as a rule are in larger amounts and his volume of business greater. He sells in the principal markets of the United Kingdom and the Continent.

It is unnecessary to dwell any further on the movement of the grain from the primary to the seaboard markets, as this has already been explained. When the grain which the exporter has bought arrives at the seaboard, Philadelphia, for instance, it is put into storage elevators previous to its sale and shipment abroad. While it remains here the exporter must pay storage and insurance upon it. If he holds any large quantity of grain and needs additional credit he borrows from the bank, using his warehouse receipts as collateral.

The exporter sells his grain through brokers on the Exchanges of Liverpool, Antwerp, Copenhagen, Hamburg and other important European markets. The services of the broker are similar to those of the broker in the seaboard market. The business is largely an over-night one; offers are made by the exporter in the afternoon and acceptances received in the morning. The broker furnishes the exporter with the name of the purchaser, and sends shipping directions. For his services he receives a commission from the exporter.

In figuring the price at which he can sell, the exporter must take into consideration the cost of the grain at the seaboard, the prevailing rate of foreign exchange between the two countries, the cost of ocean freight and insurance, interest, broker's commission, and his profit.

At the time the sale is made, whether it is for immediate or future shipment, the exporter can contract for ocean freight to the amount needed. The steamship companies are represented upon the exchanges, and will make contracts for tonnage to be filled in the future. As ocean rates are subject to considerable fluctuation due to the changing volume of traffic, the exporter who desires to avoid speculation contracts for his tonnage at the time his export sale is made. There is, however, some speculation in ocean freights. Contracts for tonnage are made on anticipation of future business and higher freight rates. If this business fails to materialize other tonnage must be furnished or dead freight paid on the contract.

The insurance upon the cargo is placed at the time of shipment. Brokers representing marine insurance companies are members of the Exchange, and the contracts for insurance are made there. As the insurance rates do not fluctuate there is no speculative risk attached, and no necessity for contracting for insurance in advance. The policy is made payable to the consignee, but the premium is paid by the exporter.

When the details of the shipment have been completed the exporter draws a draft or commercial bill against the purchaser for the amount of the shipment, attaches the steamship bill of lading and insurance policy covering the cargo, and sells the bill to his banker at the current rate of foreign exchange. This completes the sale so far as the exporter is concerned. The bank has purchased the bill and it looks after the collection on the other side.

In addition to his own export business the seaboard exporter often represents some primary market exporter in looking after the latter's shipments through the seaboard market. The seaboard exporter has the grain stored in the elevator and insured while awaiting shipment, and also contracts for ocean freight and insurance for the grain. For these services he receives a certain commission. He is, therefore, both a competitor and an agent of the exporter in the primary market.

## CLASSIFICATION OF GRAIN INTO GRADES

BY J. C. F. MERRILL,

President, Board of Trade of the City of Chicago.

### *State Inspection*

The practice of classifying grain into grades, more commonly called inspection of grain, is distinctly American in its origin. In the year 1858 the Board of Trade of the City of Chicago created a department for the classifying of grades numerically according to specified requirements of color, quality and general condition, and at the same time certifying to those grades. This same general scheme, with small changes to meet local conditions, spread throughout the country, greatly facilitating trade between widely scattered markets and individuals. State inspection of grain also had its beginning at Chicago, it being established by the State of Illinois in 1871. Missouri, Minnesota, Indiana and Kansas followed in turn. A brief digest of the laws of the five states will be helpful to a correct understanding of the practice:

#### *Illinois. (Revised statutes of 1895.)*

Warehouses divided into three classes (licenses required from Circuit Court of the county—bond filed in Class A). No grain to be delivered from a warehouse unless inspected by a duly authorized inspector of grain.

Railroad and Warehouse Commissioners can put inspectors in those elevators where the proprietors store their own grain with that of others to prevent any undue advantage being taken. Elevator receipts bear on their face statement as to quantity and quality of grain received into store.

Governor, with advice and consent of Senate, appoints chief inspector of every city or county in which is located a warehouse of Classes A and B. To be a disinterested party. But appointment in counties or cities containing warehouses of Class B to be made only on recommendation of Board of Railroad and Warehouse Commissioners.

Chief inspector to have a general supervision of the inspection of grain, under advice and immediate recommendation of the board aforesaid. Chief inspector can nominate to the board assistant inspectors and other employees. Commissioners authorized to make such appointments. Chief and assistant inspectors take oath and give bond.

Chief inspector, assistants, and employees are governed by rules prescribed by the Board of Commissioners, etc., which are to be made to meet the services of inspection, and no more. Board exercises a general supervision over the inspection department, prescribing their respective duties, compensation, etc. Expenses paid from funds collected by the same. Rates of storage to be published by each warehouse of Class A during the first week in January of each year, which rates shall not be increased during the year, except as provided for. No discrimination to be made for the storage of grain. In all places where there are legally appointed inspectors of grain, no proprietor or manager of a public warehouse of Class B can receive any grain, unless same has been graded and inspected. Commission to establish grades. Committee of Appeals provided for, and their decision is final. (This committee consists of three, to which owners of grain may appeal the classification made by the inspector.)

*Missouri.* (Revised statutes of.)

Board of Railroad and Warehouse Commissioners. They appoint a chief inspector for two years. He has a general supervision of the inspection of grain, under the immediate direction of the board. Certain warehouses designated as "public." License. Bond. No discrimination in storage of grain, but charges to be uniform. Grain received at public warehouses to be inspected and graded by a duly authorized inspector. No grain to be delivered from a public warehouse unless it be inspected. (Various other provisions analogous and some identical with those of Illinois.) Chief inspector nominates deputies and such other employees as may be necessary (provision as to salaries, etc.). Commissioners establish the grades of grain. Commissioners can subpoena witnesses. (Attachments for contempt of courts.) (Weighmasters provided for.)

*Minnesota.* (Revised Laws.)

Elevators located at St. Paul, Minneapolis and Duluth, and other points in the State, which are now or may hereafter be designated as terminal points, in which grain is received for storage in bulk, and that of different owners mixed together, or so stored that the identity of the different lots or parcels is destroyed, shall be public warehouses, known as terminal warehouses. License. All grain to be inspected on receipt. All grain received at a terminal elevator to be inspected and graded by a State Inspector, and reinspected in like manner upon delivery from such warehouse. Charges of same paid by warehousemen and added to the storage. Minneapolis and Duluth grain inspection. Boards provided for two years' service. The "Minnesota" grades established by these two boards. They appoint a chief inspector for two years. Deputy inspectors provided for; deputy inspectors of St. Paul, Minneapolis and Duluth styled "chief deputies."

Inspectors to inspect and grade all grain received at or shipped from any terminal warehouse, whether in car or boatload lots. Appeal to nearest

Board of Grain Appeals is provided for. Not necessary to have grain stored, upon giving proper notice, etc. Weighmasters provided for. All moneys coming into State treasury through this means are appropriated to the salaries of this department. The Inspection Boards were formerly known as the Board of Appeals.

*Indiana.* (Indiana Statutes.)

Board of County Commissioners in any county may appoint inspectors for four years, unless removed—to inspect within said county, when required, salt, beef, pork, flour and hay.

There shall be appointed annually, by the Board of Trade, or other commercial organization, one or more inspectors of grain, or other property for the county where such board is organized, and in case there be no such organization in any county then the judge of the circuit court may appoint such inspectors (oath prescribed). Where there are two or more such organizations in any city, the one whose members deal most exclusively in grain or produce shall make such appointment, and shall provide for his compensation; and for that purpose may fix a schedule of fees to be paid by the owners of such property as may be inspected. Such inspector may classify and determine the grade to which any article of property submitted to his inspection belongs; but where there is a Board of Trade or other commercial organization in such county, it shall have the exclusive authority to fix the grade of property, defining what shall constitute grade numbers one, two, etc., the inspector determining only as to what grade the same belongs. Where there is no such organization in any county, then the grading and rates of compensation adopted by such city nearest the point where such grain or other property is inspected shall govern the inspector in his inspection.

*Kansas.* (Code.)

Department of record established for inspection and weighing of grain, called State Grain Inspection Department. Such department has full charge of the inspection and weighing of grain in the state at all railroad terminals, public warehouses, or other points within the state, wherever state grain inspection and weighing may be established at the discretion of the chief inspector. The governor appoints a suitable person, with confirmation of the senate, to be known as chief inspector of grain for the State of Kansas; two years' service.

Duties: 1. General supervision of inspection and weighing of grain. 2. Supervise handling, inspection and storage of grain. 3. Establish necessary rules and regulations. 4. To keep proper records. 5. Investigate complaints of fraud in the grain trade. Bond, \$10,000. Chief inspector can recommend to the governor a suitable person as supervising inspector of each city, town or place in the state, where one or more public warehouses may be doing business under the law. They shall visit daily the elevators and railroad tracks, supervising inspection, with a view to securing a uniform



inspection of grain. A supervising weighmaster also to be recommended for similar place. He shall supervise weighings, inspect scales, etc. Assistant inspectors.

The principal primary markets of the country are situated in the states which actively control the grading of grain by legal enactment. The Atlantic seaboard and Gulf cities from which grain is exported, as well as the primary markets of Detroit, Toledo, Cleveland, Cincinnati and Buffalo, established exchange inspection soon after the Chicago Board of Trade put it into effect. The reliability of inspection certificates is of first importance. Primarily, inspectors operated on their own individual responsibility, the certificates of each being valued according to his reputation for ability and honesty. But misunderstandings between sellers and buyers of grain, and a more or less general desire in the trade to trust official commercial standards rather than the honesty of individuals, suggested some established system of inspection, with the result first of exchange inspection, to be followed in the several states mentioned, by legislative enactment, to give to such system the force and security of law.

Uniformity, in a broad sense throughout the country, has been a recognized necessity from the first. In the main the same rules have been adopted and the same standards established in all markets. Local conditions, however, have to some extent dictated differences calculated to meet local needs. These differences, minor in their origin, had a tendency to increase, at least to increase in their effect as the trade became larger, the need of uniform phraseology as well as to recognize the importance of a strict application of the inspection rules.

The Grain Dealers' National Association, which has many hundred members throughout many states, with a strong representation of board of trade and exchange members, together with the Chief Grain Inspectors' Association, set themselves the task of bringing about uniformity of practice throughout all of the states and markets east of the Rocky Mountains. It has energetically continued the work until with very minor exceptions it has become an accomplished fact. West of the Rockies, probably due to the dry harvest season, grain is stored in sacks when threshed and piled in sheds for longer periods, and remains in the sacks until used, even being exported in that way. Its quality is quite unlike that

grown east of the mountains and requires entirely different rules. Grain arriving at its initial market, when graded, is likely to remain of that grade until finally disposed of.

It may lose its identity through being stored in bins with grain of like grade and quality, to be inspected out of store of the same grade when shipped, or used, or if susceptible of improvement by cleaning or blending with other lots or parcels, it may pass to a higher grade, or if becoming infested by weevil, or from heating or in any way deteriorates in quality it will be degraded, but as a general statement, when inspected out of store for shipment or use its grade is likely to be found unchanged. Therefore, the bulk of grain in commerce in the United States receives its grade at one of the markets situated in the states having state inspection laws. It is true, that in the aggregate much grain arrives at the seaboard and Gulf cities, which for the first time is graded, but the entire quantity is small in comparison to the total quantity arriving at the principal markets of the Middle West and Northwest. Thus, the security of law is applied as a compelling force in the larger markets, which by reason of their importance, have influenced the creating of standards in less important markets, which through the uniformizing influence of association effort, has given to the grain commerce of the country the practical effect and result of inspection under state law. Originally, and until within recent years, all grading was done at the side of the car, commonly known as "track inspection." At Chicago, Minneapolis, Duluth, Buffalo and in part at other markets, what is known as "room inspection" has taken its place.

Established customs are not easily overcome, and there is still some difference of opinion as to the relative merits of these methods, but there is no disposition on the part of those who have made the change to return to the older way. The classification of grain into grades is but the expression of expert judgment. Difference in the judgment of different men, when, as in Chicago, fifty or more at times are required, constitutes the variations sometimes complained of as amounting to inefficiency. It will readily be seen that fifty men working singly and apart from each other, may differ in instances to a degree which those less expert may recognize; hence, any system which gets away from the judgment of individuals, and in its place puts the combined judgment of several

of equal experience and ability, may fairly be held to be an improvement. Track inspection is the judgment of an individual. Room inspection is the combined judgment of several. Room inspection has the added advantage of laboratory aid when it is needed, as in determining the percentage of moisture, or of mixture with other grain, or any of the several conditions which require careful analysis and exact determination. Frozen moisture in grain is difficult to judge even approximately under favorable conditions, but wholly impossible to determine by one whose sensibilities are benumbed through exposure. The judgment of an expert inspector, who has been on the tracks several hours in the early morning with a zero temperature, is practically of no value in determining the moisture content of new crop, uncured frozen corn. The laboratory test, so easily accomplished under the room system, is exact. The efficiency of the room method rests upon exactness in sampling the cars, for the inspectors fix the grade of the car, as represented by the sample taken from it for that purpose.

The capability of the samplers to judge of variations found in different parts of the same car, requires that they also shall be expert judges of quality. With laboratory aids, and with the presence of several inspectors to render combined judgment, there is small chance for error in grading. But with cars loaded full, even to the roof, a most common occurrence, it is impossible in every instance to secure a true sample, one which accurately represents the quality of the entire carload. The track inspector is equally handicapped when cars are so loaded; therefore errors due to this cause, which is the chief one and responsible for more mistakes than any other, are not greater under the room method. The railroads are responsible in a large measure for this difficulty. They require loading to a given weight in accordance with the capacity of the car, usually to within ten per cent of its marked rating. Wheat and other heavy grains can be so loaded and leave enough room for accurate sampling, but oats, especially in years when the test weight per bushel is light, gives the inspection departments much trouble. Within the experience of the writer the minimum carload has mounted from sixteen thousand pounds to ten per cent below the sixty, eighty and one hundred thousand pound cars respectively, which comprise mainly the equipment of all roads at the present time. Railroad tariffs provide for minimum

load of ten per cent below marked capacity of cars. To avoid payment of a penalty, when necessary to do so, cars are loaded full. Railroad tariffs should provide usual tariff rates on such weight as cars may contain when properly loaded for thorough sampling for grading purposes.

These and kindred difficulties of the inspection departments pertain entirely to the "in-inspection," that is, the grain arriving from the country to be inspected for the first time. The "out-inspection," that is, grain loaded at market centers for shipment, does not involve the same difficulties. It is sampled as it runs into the car or vessel, its true quality thus being easily noted. Occasional error where the volume of business is large must be expected, yet mistakes are few in number when compared with the magnitude of the business done. Last year in August the receipts of oats at Chicago were above one million bushels per day; to this add receipts of all other grains, amounting in all to approximately two thousand cars per day, and the importance of the function of grain inspection as carried on in the several markets of the country where it is practiced becomes evident.

Its value to the producer and to the consumer alike is apparent. It was said a few years ago by an Englishman of prominence in the grain trade, that of all the inventions of human ingenuity in the grain business, the American system of grading is the greatest. I have said that it is distinctly an American institution. Canada is the only country which has fully adopted it. Nearly all foreign countries prominent in the exportation of grain, handle it, as it is done in our Pacific states, in bags. Some of these countries have adopted it in part, and whenever they shall have adopted the method of handling and storing grain in bulk, it will of very necessity be also adopted. The Australian government and also that of South Africa, have made a formal investigation of our methods within the current year. Sir Thomas Price, Commissioner of Harbors and Railways for the Transvaal, made a tour of this country in the early months of this year for this purpose, inspecting at Chicago and at country stations in Illinois terminals and country elevators. He remarked to the writer that our system was most complete, and our advancement from the older method of handling in bags marvelous. In foreign markets commerce in grain is carried on in contracts known as "rye terms," the final adjustment

of which is a decision of a committee which determines if the commodity is of the quality contracted for.

While this business necessarily is carried on with honor on the part of the buyer, yet it is well known that he rarely gets the worst of the trade. The seller can never know the final outcome of the transaction until the arrival of the grain and the action of the committee. Many bitter complaints are made by sellers on this side, of their treatment in this regard on the other side of the Atlantic.

Because the foreign buyer of grain on "rye terms" has the advantage of the sellers, he naturally objects to buying on American terms, which are "Loading inspection certificate final." American sellers of grain abroad, for reasons stated, almost without exception, refuse to sell on foreign terms. But the foreign buyer is notoriously a buyer of the lower priced article. If he be offered standard quality grain with a representation that it will undoubtedly arrive in safe condition, and at the same time is offered an "off grade" at a little less price, even though he be told that the risk attending the shipment of it should be considered, that its safe arrival cannot be promised, he will, almost without exception, buy the cheaper article. And if he be told that he can insure safe arrival as to condition for less than half a cent per bushel, he will decline to incur even so small an expense and assume the risk himself. With full and fair warning, he makes the contract, and when it results unsatisfactorily to him, or more likely to his customer to whom he sells "to arrive," much and loud complaint is made about "American certificates," and talk will be heard of "posting" the market from which the grain was exported and which certificates the grain. The writer, acting in an official capacity, has had occasion to inquire into and investigate foreign complaints about American grain, and with just the result as to facts outlined above. It is not claimed that our business practices are always free from regrettable incidents. That would be improbable. It is but fair to say that foreign buyers are as much at fault as are sellers to them on this side. The major part of the complaints made relate to winter and spring shipments of maize or Indian corn. From the beginning of the exportation of this cereal to within a space of ten years, the United States had so large a surplus of this grain that the larger portion of, indeed practically all that was sold abroad, was of the



previous year's crop, well cured and qualified to bear shipment with safe arrival assured, as to condition. Foreign buyers confidently relied upon it to do so. Our maximum of overproduction was reached in the year 1896, at which time we had several hundred millions of bushels of previous crop corn on hand at the beginning of winter, and the price for number two, which is the standard contract grade, sold as low as nineteen and one-half cents per bushel. Since that time our home consumption has steadily and rapidly increased, and notwithstanding we have also increased our production until the last crop, that of 1910, exceeded three thousand million bushels as against two thousand millions at the time of the low prices referred to. Practically speaking, there is now no previous year crop corn on hand in this country on December 1. The effect of this is that the foreign buyers, as well as the home dealer, must of very necessity, if he buy corn at all, take from the new crop uncured, moist corn, unfitted as yet to bear prolonged shipment, especially across the ocean. It would appear that the United Kingdom and European buyers are slow to appreciate these simple facts, and because of successful purchases of former years continue to buy uncured corn with confidence. The buyer is fully advised of the risk he assumes and he is plainly told that only artificially dried corn will take the place of the dry corn of summer, but as this adds materially to the cost, he buys the lower priced grade and takes the risk. And, as before stated, when the purchase does not turn out right he complains bitterly, and asserts that our inspection system is faulty. Indeed, the same English gentleman, quoted herein, as complimenting our system of grading, now expresses his belief that our practices have become so very reprehensible and uncertain that the federal government should assume the function of inspecting grain.

If the foreign buyer would insist upon buying on the basis of uniform inspection rules, and would use care in buying those grades which will safely bear shipment, or when buying new crop corn would do so on a specified moisture content of not above seventeen per cent in winter, and fourteen per cent in spring months, he would, as shown by experience, have no trouble, the safe arrival of the grain being thus assured. Moisture content certificates are now obtainable in all markets. The United States Government maintains laboratories at all shipping centers, and nearly all



exchanges likewise possess them. Shippers may use either. The government renders the service free. With the advent of summer the trouble disappears, nature having completed the cure through the natural drying of the corn as it reposes in the crib of the grower unshelled. But, by way of emphasis, as stated, the foreign buyer persistently prefers to buy cheaper corn, cheaper because of the higher moisture content. The fault is his own. He may eliminate that of which he complains by buying a higher grade of grain, that which has been kiln dried to a safe shipping condition. It is a mistake, in view of these and other facts, to attach too much importance to complaints of this nature. There is small reason for our representatives at Washington asserting, as some of them have, that our commerce is being injured by our exporters. The trouble with the whole matter is not original with them. It has its origin primarily abroad. The foreign buyer can always buy any grade or quality he wants to buy, and he has no excuse which is deserving of respect, when he buys a cheap article, or when he neglects to use ordinary prudence in making contracts. It is a well established principle in economics that profits are in proportion to risks. The risk to be assumed in the export of grain may be reduced to a minimum through buying commodities of standard quality. The complete cure for the ills the foreigner complains of suggests itself.

#### *Proposed Federal Inspection*

The movement for federal grading of grain was begun in the fifty-first congress, 1890. Senator Ingalls introduced a bill for uniform standards of classification and grading of grain. Other similar bills were introduced from time to time until, in the second session of congress, on January 19, 1903, Senator McCumber introduced a bill, the provisions of which were much more extensive and minute than any previous bill. Former bills, in the main, sought only to establish standards to be observed by existing inspection departments, in order that uniformity might obtain. Senator McCumber's bill contemplates the assumption by the government of the function itself, seeking to set aside and displace existing state and exchange authority so far as possible.

Senator McCumber has introduced his bill into each successive congress up to, and including, the present congress. A reading of the bill as it now stands will help in fully comprehending its import.

## IN THE SENATE OF THE UNITED STATES

APRIL 6, 1911.

## A BILL

To provide for the inspection and grading of grain entering into interstate commerce, and to secure uniformity in standards and classification of grain, and for other purposes.

*Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,* That the Secretary of Agriculture shall organize in the Bureau of Plant Industry of his department a section of grain inspection and grading, and shall, according to the rules of the civil service, appoint such experts and other employees as may be deemed by him necessary to carry out the provisions of this act.

SEC. 2. That said secretary shall also appoint, in accordance with the rules of the civil service, at each of the following cities, to wit, Portland, Maine; Boston; New York; Philadelphia; Baltimore; Chicago; Minneapolis; Duluth; Superior; Kansas City, Missouri; Saint Louis; New Orleans; Seattle; Tacoma; and San Francisco, and at such other important centers of interstate trade and commerce in grain as he may consider necessary or proper for carrying out the provisions of this act, one chief grain inspector and such assistants as may be required to inspect and grade grains as herein provided: *Provided, however,* That said secretary may appoint a chief or deputy inspector at such important point of intrastate grain trade as shall furnish sufficient inspection service to fully pay the expenses of maintaining an inspection at such point, when the said secretary is assured that the grain trade interests at such point are desirous of securing federal inspection; but in no case shall such inspector inspect or grade such intrastate grain, except upon request of the owner thereof or his agent.

SEC. 3. That said inspectors shall be paid a salary or compensation to be fixed by the Secretary of Agriculture, which shall correspond as near as possible to salaries and compensations paid other officers or employees of the government performing similar duties.

SEC. 4. That the Secretary of Agriculture shall make all needful rules and regulations governing the inspection and grading herein provided for.

SEC. 5. That said Secretary of Agriculture be, and he is hereby, authorized and required, as soon as may be after the enactment hereof, to determine and fix, according to such standards as he may provide, such classifications and grading of wheat, flax, corn, rye, oats, barley, and other grains as in his judgment the usages of trade may warrant and permit. In the inauguration of the work herein provided he may, if in his judgment the best interest of trade and commerce in said grains require it, adopt the standards of classification and grades now recognized by commercial usages or established by the laws of any state or by boards of trade or chambers of commerce, and may modify or change such classifications or grades from time to time as in his judgment shall be for the best interest of interstate and export grain trade.

SEC. 6. That when such standards are fixed and the classification and

grades determined upon the same shall be made matter of permanent record in the agricultural department, and public notice thereof shall be given in such manner as the secretary shall direct, and thereafter such classification and grades shall be known as the United States standard.

SEC. 7. That from and after thirty days after such classifications and grades have been determined upon and fixed, and duly placed on record as hereinafter provided, such classification and grading shall be taken and held to be the standard in all interstate commerce in grain.

SEC. 8. That it shall be the duty of any railroad company, steamship company, or other firm or corporation or private individual engaged in the transportation of grain destined to any state, territory, or country other than that in which it is received for inspection, or received from any other state, territory, or country than that to which it is consigned, to notify the chief grain inspector at the place of destination of any consignment of grain, within twenty-four hours after its arrival, that a shipment, cargo, or load of grain is in its, their, or his hands and the place of destination of said grain.

That it shall be unlawful for any person herein named to wilfully unload or otherwise discharge any load, cargo, or consignment of grain which has been at any time during the period of its transit an article of interstate commerce and which has not been inspected in accordance with the provisions of this act, until the same has been inspected as provided herein.

Upon the receipt of such notice the said chief inspector shall cause the said grain to be inspected and graded in accordance with the classification and standards fixed by said secretary, and to issue and deliver a certificate of inspection showing such grade and classification in such form as may be provided by rules prescribed by said secretary.

SEC. 9. That it shall be the duty of said inspectors to inspect and grade all grain which at the time of inspecting and grading of the same has been shipped from any other state, territory, or country than the state, territory, or country in which the same is inspected, or is intended for shipment into any other state, territory, or foreign country before the same is unloaded from the car, vessel, or other vehicle in which the same was or is being transported, and to charge and collect from the owner thereof such fees for the inspection of said grain as may be fixed by the Secretary of Agriculture, who shall have the power to fix the rate of charges for the inspection of grain and the manner in which the same shall be collected, and which charges shall be regulated in such manner as will, in the judgment of the Secretary of Agriculture, produce sufficient revenue only to meet the necessary expenses of the inspection service, said fees to be covered into the Treasury of the United States as miscellaneous receipts, in the same manner as for other miscellaneous receipts: *Provided, however,* That such inspector, upon request of the owner or agent of any grain at the point or place where an inspector may be located, whether or not the grain has entered into interstate commerce, shall inspect the same and deliver his certificate therefor in the same manner as other

inspections are made and for the same charge; and whenever the owner of grain at such place shall request and furnish facilities therefor, said inspector shall also weigh such grain and deliver to the owner or his agent his certificate showing the gross and net weight of such grain, under such rules and regulations as may be prescribed by the Secretary of Agriculture.

SEC. 10. That no inspector or deputy inspector of grain shall, during his term of service, be interested, directly or indirectly, in the handling, storing, shipping, purchasing, or selling of grain, nor shall he be in the employment of any person or corporation interested in the handling, storing, shipping, purchasing, or selling of grain.

SEC. 11. That any person interested in any consignment of grain inspected under the provisions of this act may appeal from an inspection made by any assistant inspector to the chief inspector at the point where such grain is inspected, and from said chief inspector to the Secretary of Agriculture. Said secretary shall make all needful rules and regulations to govern appeals.

SEC. 12. That when any grain which having been inspected and certificate of inspection issued hereunder is mixed with any other grain not inspected or with grain which has been inspected and certified at a different grade, the same shall not be shipped out of the state where such mixing is done without being reinspected and graded; any such person or corporation shipping such grain as aforesaid without reinspection shall be deemed guilty of a misdemeanor.

SEC. 13. That the shipment or consignment of any grain aforesaid from any of the places mentioned herein to another state or foreign country without the same being inspected and graded as herein provided is hereby prohibited; but where grain has been once inspected hereunder, and remains unmingled with other grain, the same need not be reinspected at the place from which it is exported: *Provided, however,* That said secretary may, in his discretion, reinspect any cargo of such grain before the same is exported.

SEC. 14. That it shall be the duty of the inspectors and assistants to investigate the handling and weighing of grain inspected by them, and to make such report thereon as the said secretary may require; and it shall be the duty of every person or corporation weighing such grain to allow inspection of such weighing and handling by said inspectors.

SEC. 15. That any person or corporation who wilfully does any act prohibited herein or who wilfully refuses or neglects to do or perform the things required of him under the provisions of this act shall be deemed guilty of a misdemeanor, and upon conviction thereof, shall be punished by a fine in a sum not to exceed five thousand dollars, or by imprisonment not to exceed one year, or by both fine and imprisonment.

SEC. 16. That for salaries and for all other expenses in the city of Washington, or elsewhere, deemed necessary by the Secretary of Agriculture to carry out the provisions of this act there is hereby appropriated, out of any money in the treasury not otherwise appropriated, eight hundred and fifty thousand dollars.

SEC. 17. That this act shall take effect and be in force from and after the first day of January, nineteen hundred and twelve.

There are reasons for believing that the author of this bill has in view what he believes to be the needs of his own State of North Dakota, rather than the question as a whole without taking into consideration its effect upon the entire country. That there is not now, nor has there ever been, a popular or public demand for this legislation may be confidently asserted. It may be fairly doubted, but for the activity of its author, that it would not have been heard of during recent years. There are but three of the surplus grain states which do not have their own primary markets. These being the two Dakotas and Iowa.

The latter state consumes largely of its product, being a large producer of fat cattle and hogs, and also has numerous mills and cereal manufacturing interests of importance. The surplus grain from these three states enters interstate commerce, that of North Dakota naturally going to the two Minnesota markets of Minneapolis and Duluth. It has been claimed by the author of the bill that the people of North Dakota believe that the grain inspection law of the State of Minnesota works a hardship to the farmers of their state. The legislature of North Dakota memorialized the legislature of Minnesota on the subject, but without securing relief; therefore, the desirability of a federal inspection law. It is the belief of those well acquainted with the matter that much aid and comfort has been given the McCumber propaganda by the Department of Agriculture.

Some of the assistants to the secretary have stated to the writer, however, that the department does not desire the full control of inspection of grain throughout the country, provided for in the McCumber bill. It rather desires to be helpful only to the inspection departments of the several states and exchanges where the practice is already established or hereafter to be established. It does not wish to assume the burden of administering in detail so large a work, nor does it feel warranted in interfering so extensively with established conditions, especially without a more general demand that it should do so. The farmers generally have a very imperfect conception of the entire question of grading of grain. It is a well established fact that, notwithstanding they plant, reap and market it, as a class they are not at all expert in closely judging



quality. The proposed enactment has met with small favor by the grain trade. At only two of the primary markets have dealers expressed a preference for it, and in these markets the trade is by no means a unit in favor of it. These markets, St. Louis and Duluth, are, by reason of their geographical situation, so to speak, astride of state lines. The conflict between the local inspectors of the separate states, the certificates of both being used, has brought about petty annoyances and jealousies which would gladly be eliminated if possible, and a cursory view of the problem has suggested a cherished relief in federal inspection.

It should be remembered that federal inspection could be applied only to grain in interstate commerce. By no possibility could the federal authority be imposed on intra-state grain, that moving wholly within a state. As before noted, there are but three surplus grain states which do not have their own markets to which a major part of the product of the state is consigned for sale. Therefore, federal inspection would be inoperative to a large degree, for until grain should have entered interstate commerce, could it be inspected by a federal inspector, if there were such, only on request of the owner. This being unquestionably the case, it is clear that existing departments would continue of necessity.

In some of the states, as in Illinois, for example, public storage elevators require a state license, and the certificates issued by them must be registered by the state registrar, the grading and public warehousing of the grain being the principal features of a general plan calculated to be of great benefit to producers and consumers, as well as to those engaged in merchandising it. It is improbable that any part of this law would be repealed because of federal enactment. When the Interstate Commerce Commission was created none of the states repealed their railroad laws and turned over to that body the regulation of intra-state rail rates, rather the several states became more active in the matter of state control.

Furthermore, grain in interstate commerce and graded under authority of the government would not of necessity remain so. A single example will suffice. If loaded at Chicago, Duluth or any of the upper lake ports for shipment to lower lake cities, being interstate commerce the grain would fall within the jurisdiction of the government, but on arrival at destination would lose its identity on being unloaded and would be at rest within state authority. If at



Buffalo or Ogdensburg it could be then loaded out and shipped to any part of the State of New York, including the great market of New York City, or if at Erie, could be shipped to any part of the State of Pennsylvania, including Philadelphia, and would be intra-state. Thus, its original inspection which the farmer would be most interested in, and its final sale in which the consumer would be equally interested, would both be intra-state, unless, as stated, federal inspection was requested. It may be conservatively stated that not half of the grain in commerce day by day, the country taken as a whole, could be made amenable in matters of inspection to the authority of the general government.

Double inspection would be imposed on a large quantity of grain, inasmuch as present systems would be continued. This, so far as it was applied to the initial grading, would be borne by the farmers, for all expenses incidental to marketing produce is deducted from the price originally paid the producer. And likewise in its application to the final disposition of the grain, if interstate business, the buyer would pay for it in the price. If double inspection was thus applied to all of the grain received and shipped from Chicago alone, it would amount to two hundred thousand dollars per annum at the current rate of fifty cents per thousand bushels.

The objections herein offered to federal inspection of grain, are those of a practical nature. Other objections might with propriety be urged. The objection to paternalism in government has been mentioned in this connection. That the function of government is to govern. That government should keep hands off the business of the country as a competitor and should not in any way interfere with established authority now actively rendering such satisfactory service as can with reason be expected, and far more satisfactory than could be expected of a government department. The people are not willing to cast aside the result of most careful effort covering a period of nearly forty years and substitute therefor an experiment, a new creation of doubtful capability, and of political control. It is the better part of judgment to hold fast to that which is good. At the close of a hearing by the Senate committee on agriculture in February, 1909, its chairman, the late Senator Dolliver, remarked to the writer who had just closed a representation against the McCumber bill. "The more I come to

know about this question, the more I am convinced that it is a matter for business men, and we legislators would better let it alone." The conclusion of Senator Dolliver was based on consideration of the question covering a period of several years, during which, as a member of the Senate committee, he had heard many arguments both for and against. It may well be accepted as a wise and sound conclusion. As evidence that his committee coincided with his opinion, is the fact that the bill was not reported out by it.

*Value in Consummating Transactions at Home and Abroad for Present and Future Delivery*

The system of grading greatly facilitates the selling of grain for future delivery. This has become so large and so important a feature of grain in commerce that its brief discussion may not be out of place.

Production imposes ownership of the product. This is a simple truth and so commonplace that its importance is generally ignored. Each crop, generally speaking, is a year's supply. And of necessity some one must own, from the time of production to the time of need, the food necessities of the people. Ownership is inseparable from the risk incidental to the fluctuations of price, due to the vicissitudes of the seasons, and therefore is most uncertain. Whoever assumes this risk, if he does it with a knowledge of all known conditions affecting values, renders a great service to society, in helping to carry the food necessities of our ninety millions of people. Each person requires five bushels of wheat per year, as well as other products of the soil. The carrying of this enormous food supply involves responsibilities seldom fully comprehended. It should be remembered that in finality all products of the farm are for the use of the people. If bountiful crops are harvested and plenty fills every granary, prices will fluctuate less than if drought and early frost, or both, operate to diminish the supply, or have the result of scarcity. The Department of Agriculture systematically gathers reliable information about acreage, growing conditions of the crop, percentage of old crop on hand, and at stated frequent intervals publishes it in detail. This information is eagerly sought by all interests, inasmuch as the prosperity of the entire country depends upon the creation of new wealth. It is also a matter of

concern to almost everyone to know if there be a plenty or a scarcity of food necessities; if they will be cheap or dear. This has ever been the basis of transactions of large and, at times, of enormous proportions.

Thirty-six centuries ago Joseph stored large quantities of wheat in Egypt in times of plenty against times of scarcity. Undoubtedly the practice was ancient in his time. In our day the practice of buying and selling for future delivery has not only become a part of the business of every miller and every jobber of grain, but has become the business of a distinct class of men who are willing to take fair risks, based on their knowledge of conditions. Mr. Justice Holmes, of the United States Supreme Court, in a decision says: *"People will endeavor to forecast the future and to make agreements according to their prophecy. Speculation of this kind by competent men is the self-adjustment of society to the probable. Its value is well known as a means of avoiding or mitigating catastrophies, equalizing prices and providing for periods of want."*

Storage merchants, millers, jobbers and owners generally of any considerable quantity of grain practice more or less, the elimination of the risk of ownership due to market fluctuations, by making hedge sales. Hedge sales are insurance against loss. Having a given quantity of grain on hand and effecting a hedge sale of the same quantity, it is plain that a rise or a fall in the price neither gains a profit or makes a loss. The loss on the grain on hand in event of a fall is offset by the profit in the hedge contract due to its also having declined and conversely. It places a merchant or a miller in the position of having a stock on hand with which to do business and of having insurance against loss. He may buy back any day any part of his hedge which may be needful to offset his sales of that day from his stock.

Hedge sales are always of the standard grade of No. 2, as No. 2 wheat or No. 2 corn. Transactions in millions of bushels, sometimes daily, for foreign account, are consummated in the Chicago market. The United Kingdom and Continental markets are all liberally represented in this business, there being no other market where orders in such quantities can be executed.

This is because of our system of classifying grain into grades, and the storing of graded grain in enormous quantities. As this is

written there is in store in Chicago more than twenty million bushels of wheat. The standards of grade are well known in all foreign markets. The carrying of the grain which enters the commerce of the United States, and to a large degree that also of Europe, results in the selling and buying for future delivery of enormous quantities. As it moves along the highway of commerce it changes ownership many times between the period of production and that of consumption. Each different owner may hedge it, buying back his hedge when he sells the commodity itself. It transpires that the total grain thus sold and bought for future delivery many times exceeds the quantity produced. The same may be said of the currency of the country, the business of the country every day many times exceeding the circulating medium of the country. The United States Government is most active in disseminating all crop information procurable, as well as reporting stocks of previous crops in farmers' hands, thus affording information calculated to influence values, it follows that these reports are anxiously looked for by all holders of food necessities, with the result of more or less change of value. Favorable crop conditions operate to depress values, unfavorable conditions or small remaining stocks having the opposite result.

As with all business carried on in an extensive manner, abuses of greater or less degree accompany it with many regrettable occurrences.

The daily press greatly exaggerates market episodes, treating them in a sensational manner. The great, broad stream of commerce in grain flows silently by with scarcely a thought on the part of anyone about its tremendous volume and importance, but every ripple on its surface is quickly recognized and is featured far beyond its deserts, all for the sake of a sensational article to help make their particular issue popular. This has become a veritable nuisance, and when officers of the exchanges have remonstrated with the managing editors and have asked that the simple facts be printed, they have been told that the public demands something sensational. Reference is made to it here because the exchanges have suffered keenly from this most unwarrantable license of the press. The long time which elapses between production and consumption, between contracts and their performance, makes it extremely important to have men with a knowledge of universal

conditions anticipate the wants of the people and assume the risks of the market. The effect of this service is to render prices more steady and to equalize values.

The proof of this is found in the fact that, before selling and buying for future delivery was so largely practiced, the margin of profit required by those who carried the grain from the time of production to the time of need was much wider than now. Without it the grain trade of the country, as it now is in all other surplus grain producing countries, would be in the hands of a few men of strong financial standing. In fact, in our own country nearly all farm products not traded in on the exchanges for future delivery are so controlled. Perishable articles, such as potatoes, or those of great bulk such as hay, do not lend themselves to trading of this kind. The fresh meat business, tobacco and other less important articles are controlled by trusts.

The system of inspection of grain is a most beneficent one. It is practiced throughout the country with substantial uniformity. As now established, it serves the needs of the people as fully as such a system can.

Existing departments are administered with more direct responsibility to the grain trade of the country than would be possible under federal inspection.

It serves a broad purpose, determining the quality, leaving only the price to be adjusted in consummating transactions. It affords a well determined basis for time contracts. It is an achievement of the grain trade of the United States and should be jealously guarded through strict application of its rules, and cared for as a priceless possession of producers and consumers as well as those engaged in the distribution of farm products.

## GRAIN INSPECTION IN ILLINOIS

BY W. SCOTT COWEN,  
Chief Grain Inspector, Chicago.

Grain inspection, as understood in this day and generation, has a far more important meaning than that ascribed to it in earlier history, and the grain inspection department of the present has necessarily become a vastly more essential factor in the transaction of business as between the producer, dealer and consumer. Our present system of inspection, however incomplete, is not the inception of the moment, but rather the outgrowth of the wonderful evolution that has taken place in the methods of marketing and handling grain within the last half century. As the trade continues in its progressive strides, so must the work of the inspectors improve to meet the demands and added responsibilities.

Up to a time within the memory of many of us, the harvest was delivered in its virgin state direct from the field to the nearest mill. Machines for cleaning, purifying and preparing grain were almost unknown. As the classifications of the different cereals were then comparatively few, there was little need of especially trained experts to determine the various standards. Later, with the advent of a vast network of transportation facilities, there came about the centralization of storage houses and mills and a consequent broadening of the markets. With this change came the demand for a more general system of inspection.

To-day, with the dawn of an era of intense energy and specialization in trade, while the product of the farm is becoming greatly diversified under scientific treatment and while ways are being devised and machinery manufactured for the purposes of manipulating this product into almost every conceivable condition and appearance, it is useless to contend that the system of inspection so long in vogue has not outlived its usefulness. The departments must follow in the footsteps of progress and adopt advanced methods in determining the varieties, the quality and condition, and in many cases the methods pursued to attain quality and condition, demanded by the miller and the consumer when buying grain for specific purposes.



The "Track" system of grain inspection, the system so long in general use in all inspection departments and so designated from the fact that the work is performed and the grades established at the tracks of the different railroads instead of at a central office, had its origin on the Chicago Board of Trade in the year 1858, and was adopted by the Illinois state grain inspection department when the state assumed the responsibility of grain inspection under legislative enactment in 1871.

Since that time, however, there have been many changes in the methods of handling grain. The inspection yards were removed to points remote from the city. This made the work of inspecting much more laborious and added many new responsibilities not contemplated when the system was first inaugurated. In undertaking to cope with the changing condition of the trade without modifying the system the department in time began to deteriorate and the work of the inspectors became so uneven and unsatisfactory that Chicago inspection finally came into general disrepute and her market was avoided whenever possible.

These conditions prevailed when the present chief inspector assumed charge in 1904. Upon investigation, the criticism in most cases appeared to be well founded, but under the system in use the defects became almost unsurmountable. The thirty odd inspectors distributed among the different railroad yards and at the several elevators, without means of conferring one with another, and without the proper supervision, had necessarily to depend upon their individual judgments, and they were, therefore, to all intents and purposes the heads of thirty separate and distinct departments, each operated in accordance with the judgment of the inspector in charge.

While doing their work they were subjected to the many varying conditions of heat, cold, rain and snow, and the examinations of necessity had to be done hurriedly when the receipts were heavy. After the grades were fixed, samples of the contents of the cars were taken directly from the railroad yards to the consignee or receivers on the board of trade without being reviewed by the chief inspector or any supervising inspector, by men who acted as receivers' agents, and who were in no manner a part of the inspection department force. If the inspector had erred in judgment in fixing the grade of any car of grain, there was no opportunity of

correcting such error until after the receiver of the grain had lodged a complaint, which very frequently he neglected to do. There was no check upon him or upon his work except as a reinspection or an appeal was called for. He did his work carefully or otherwise according to his own ideas of carefulness or the convictions of his conscience or as his convenience dictated and when the arrivals were very heavy it was frequently impossible for him to give that careful attention to each individual car which the importance of the work demanded. In inclement weather cars could also be passed by and inspection postponed from day to day until better conditions prevailed without the knowledge of the department or reference to the financial interests of the shipper or receiver.

The essential and material elements of correct grain inspection are uniformity and accuracy, and under any system which does not permit of a constant personal supervision of the work of all inspectors, these results cannot be obtained. The tendency of the inspector at the track was to follow an absolutely safe course and to be sure that when a car was given a certain grade it was fully entitled to receive it. In "line" cars the tendency was never to give the grain the benefit of a reasonable doubt, to which, in my opinion, it is entitled. At the elevator, on outgoing shipments, the opposite condition prevailed. Here the grain always received the benefit of every doubt, and it was the duty of the high salaried elevator superintendent by scientific mixing to see that the "doubt" usually existed. It was therefore between these in-inspections and out-inspections, the men working under direct opposite pressure, that there was a constant drawing apart, the farmers' produce receiving a rigid inspection when received at the market and a lax inspection from the elevator when the grain was released for shipment.

Recognizing these conditions as prevailing in the Illinois department when I assumed charge, I at once gave the subject serious consideration. The first move was to develop a school of instruction for the inspectors, and by the use of type samples of the different grain and grades, seek to instill into their minds a greater degree of uniformity and accuracy. The inspectors were required to report frequently at the office of the chief inspector, where these type samples, and oftentimes samples of grain that they themselves had previously inspected, were placed before them, and they were required to record their respective decisions as to the different

grades. When errors were made they were shown to the inspector making them and their mistakes in judgment carefully explained. These examinations, from an educational standpoint, proved very beneficial, as the differences of opinion were at these meetings fully discussed and adjusted, and the inspectors were thus enabled to develop more accurate and uniform conclusions.

Improvements were quite noticeable as the result of these reviews; still the inspection as a whole was far from satisfactory. Further investigations were made, visits were paid to the inspection departments of other states, and frequent conferences held with the grain committee of the board of trade. As a result, I became thoroughly convinced that there was but one final solution to the entire problem, and that there must be a careful review made of every car inspected, and no distinction should be made between grain arriving and that being shipped out.

Thus originated the system of "office" inspection that is used in Illinois to-day, a system that preserves annually to the producers of grain large sums of money, and renders to the trade generally a service at once complete and satisfactory. This plan in general provides that samples of every car or boat of grain inspected in Chicago shall be subject to review by the most competent inspectors in the department, and that reinspections or appeals may be allowed to those desiring them with the least possible delay.

"Office" inspection consists in collecting samples of all cars of grain arriving daily on all of the different railroads entering the City of Chicago; bringing these samples to the main office of the inspection department, where are assembled a corps of the most competent inspectors procurable; and there, under most favorable conditions of light, temperature and atmosphere, the samples are taken charge of by the inspectors and the grain carefully graded therefrom. The collectors of the samples are divided into groups of men, the number in each group being adjusted in accordance with the average daily receipts on the respective railroads to which they are assigned. Each group of samplers is under the control and direction of a chief sampler who in most instances had previously been a regular grain inspector. This chief sampler is held responsible for the work of his assistants, and the strictest discipline is enforced. To add to and increase the efficiency of these several groups of samplers there is a supervising sampler who was pre-

viously a regular grain inspector, whose duty it is to travel daily from one road to another as seems necessary, to observe and "keep tab" on the work done by each group and see that every man does his full duty.

The agents of the different railroads deliver each morning to the chief sampler of each group the railroad notices of the cars in the yards ready for sampling on that particular day, and these notices are brought to the main office with the samples. The samples consist of two quart bags filled with grain drawn from different parts of the car and representing its average contents. In case of differently marked conditions in the grain, or if a car shows that it has been "plugged" for the purpose of deception, several samples are drawn to indicate the various differences of quality and condition of the contents. In case of a bulkhead car, each compartment is sampled as if from an entire car. These samples are hurried by the first train into the city and are met at each railroad station by an express wagon operated for the department and delivered at once at the main office.

The position of a "track grain sampler" is in no way an easy or inferior one. It is of the greatest importance and fully as responsible a position as that of the grain inspector who grades the samples upon their arrival at the main office. The sampler's work must necessarily be correct as to the samples of the contents of the cars, as the inspector at the office depends entirely upon the accuracy of the samples placed before him in making the grades. A grain sampler must be in good health and strong physically; able to endure exposure in all kinds of weather. He must also be intelligent, industrious and full of enthusiasm, always recognizing the responsibility resting upon him and willing to endure many hardships in the performance of his important duties.

On the arrival of the samples at the main office they are immediately taken in charge by the inspectors. The bags containing them are placed upon a shelf attached to each inspector's table. They are then emptied one at a time into a tin grain-pan, or receiver, and immediately inspected and graded. In case of what is termed a "line car," that is to say, a car so nearly on the dividing line between any two particular grades, that the inspector hesitates or is in doubt as to the grade to which it is entitled, he calls on the chief grain inspector or the supervising inspector, who is always

present, and their combined judgment determines the grade. Frequently all of the inspectors are called around the table holding some particularly difficult sample and each inspector is required to make a grade for it and give his reasons therefor. In this way a full and free expression of opinion is obtained, and through the interchange of such opinions educational suggestions are developed, and consequently a greater uniformity of opinion results as well as greater accuracy.

Immediately after the grade has been determined and the same noted upon a card, signed by the inspector making the grade, this card is placed in the bag, to which the sample has been returned and passed to a table at which is seated the record writer, who takes the card and enters all of the notations thereon upon a record sheet. These notations consist of the car number, name of the railroad over which the car arrived, the grade given the grain, and the reasons given for so grading the sample, with the name of the inspector who graded it and the sample hook on which it is to be hung.

The sample is then carried to what is called the "splitting department," where a group of men stand at tables especially built for the purpose. These men take the samples and divide them into equal parts. One-half is placed in a paper bag on which is written the car number and the initials of the railroad over which the car arrived, the grade fixed, and the name of the firm to whom the grain is consigned. The railroad notice is placed inside this paper bag along with the sample. To verify the first inspection, the samples are once more carefully reviewed by two inspectors stationed in the splitting department, whose duty it is to closely examine the notations written on the bags to see that they are correct; they also review the contents, and if an error has been made, it is then corrected.

If all these precautions are necessary under the present system to assure a correct grading, what must have been the chaotic conditions under the old system, when there was no check whatever on the inspector's work, working as he did, alone and dependent entirely upon his own unassisted judgment? It is surprising now that grain dealers exercised the patience which they did for so many years with such a system.

After this second inspection, or review, the samples are passed



to an authorized agent, whose duty it is to place them in baskets for delivery to the board of trade. Messengers then hurry them to the exchange floor of the board of trade, where they are placed on the tables of the firms to whom they have been consigned. The other half of the sample is returned to the bag from which it was taken and carried to the sample room and hung upon a revolving sample rack. Each sample being numbered, it is placed upon a hook having the number corresponding to that of the sample, where it can be readily located if necessary. These samples are preserved upon these racks for twenty-four hours; and at 1.30 P. M. of each day the samples for the previous twenty-four hours are emptied.

When reinspection is now asked for, a decision can be obtained within thirty minutes, while formerly it required from two to thirteen days, during which time the burden of risk (frequently very expensive) was entirely on the shipper. The regular inspection yards being located at long distances outside of the city limits, the cars had to be switched to what are called "the inner yards" for reinspection, involving the risk and loss of time just mentioned. These delays were frequently not only the cause of demurrage charges, but also of the grain getting out of condition, making it necessary in such cases to finally fix a lower grade than the one originally made. This would not have occurred if the grain could have been reinspected more quickly. Note the contrast with the present which by its prompt and efficient service absolutely eliminates all such delay and prevents the loss resulting therefrom.

This is a general description of the work of inspecting grain arriving, which is performed much more rapidly than it can be described. It has developed to a much greater degree than ever before known on the Chicago market, that accuracy and uniformity in the inspection of grain so much desired by all intelligent and honest dealers; and has obviated the many complaints that heretofore were received because of the lack of uniformity and correctness.

A satisfactory system of inspecting grain "arriving" at Chicago having been developed, the inspection of that "loaded out" of the elevators was next given attention. It had long been claimed that the inspection *in* and *out* of elevators was lacking in uniformity, it being asserted that the inspection *in* was much more severe than the inspection *out*. To overcome this condition, it was determined



to review, or reinspect, the work of the house inspectors stationed at the different elevators. To accomplish this an order was issued requiring carefully drawn samples to be taken from each car or vessel of the grain inspected *out*. These samples are delivered by special messengers daily at the main office, where they are at once reinspected by a board of inspectors under the personal supervision of the chief. If the work of the inspector at an elevator is not approved by this board of review, the grades given by him are changed to agree with their decision, the house inspector being notified accordingly and a record kept of each car or vessel. In this way the inspector's work is checked up and the inspection department placed in a position where it can intelligently answer any complaints or criticisms that may be made at any future time respecting any particular shipment or parcel of grain so inspected. This does away with the objection, dating back so many years, to the effect that the purchasers of elevator grain received only the very lowest, or "skin" grade. It is believed the department can now assure a just and uniform grading of grain both *in* and *out*.

Since the adoption of the present system the results have surpassed my most sanguine expectations. Complaints from shippers and purchasers have almost entirely ceased. Many errors that under previous methods were unavoidable are now prevented.

As an illustration of the success of office inspection, as perfected to this time, it might be well to instance a single recent day's work of the Chicago department. On Tuesday, February 14, 1911, the total number of cars sampled in the Chicago yards was approximately 1,800, of which number 1,531 were inspected and samples delivered to the Chicago Board of Trade for early trading. Of this large number of cars there were but forty-two reinspections called, of which number fifteen were changed by the supervising inspector. As a result of this day's work, there was but one car carried to the board of appeal.

#### INSPECTION FORCE

##### *The Grain Samplers*

The men assigned to the work of procuring samples of grain from the cars for inspection are usually selected from the ranks of the assistant inspectors or from among those who have spent years

in the service as messengers and helpers and have developed an aptitude for this particular work. The qualifications necessary to become an efficient sampler are an expert knowledge of grain, a familiarity with the methods employed in loading cars, and a faculty for keen observation. The sampler must ascertain if there is any variation in the quality or condition of the grain, and also if there has been an improper loading of the car. He must secure a sample of each kind and quality of grain contained in the car, determine the probable proportion of each, and must also make notations such as "small load," "subject," "car too full for thorough sampling," "car in leaky condition," "heating," that "snow or rain has affected the contents," and many other facts that go to form the records of the department. No man is permitted to attain the position of sampler who is not thoroughly qualified for the position and has not served a long apprenticeship.

#### *The Inspectors*

The work of the inspector is to classify the grain according to its quality and condition in order that it may go into store and be mixed only with other grain of like quality and condition, or be sold at a price based upon what has become a recognized comparative standard of value. In so classifying the grain he gives it one or another of the many established grades as his judgment may dictate.

The requirements of each of these grades are fixed by a rule established by the railroad and warehouse commissioners; but as the inspection of grain is not an "exact science," and as the grades necessarily approach each other by imperceptible degrees, and meet upon debatable ground, it will be seen that the written rules serve as a guide rather than as an inflexible standard for the inspector, and that upon his judgment the final and practical application of rule necessarily depends. It is therefore evident that an inspector must not only have that expert knowledge of the grain itself which comes from years of experience, but that he must have such absolute familiarity with the requirements of each grade as to enable him promptly and accurately to give each car its proper grade, and to state clearly, and concisely, the reasons which lead to his decision. An efficient and reliable inspector must have also evenness of

judgment, the faculty of so carrying a grade in his mind that he will give a particular lot of grain the same grade he gave a similar lot a week or a month before, and a tenacity of opinion that cannot be affected by any surrounding influence.

In grading the grain that passes through his hands every conscientious inspector is influenced by the fact that he is, in a certain sense, making an appraisal of another's property, and fixing the price at which it shall be bought and sold. It is not to be assumed that any inspector is infallible, or that he will always adhere to established lines with unwavering accuracy. In fact, there is a well recognized tendency among the best inspectors at times, when not properly supervised or enabled in some other way to compare their work with that of others, to swerve, unconsciously and imperceptibly to themselves, from their established lines.

In the Illinois department the men entrusted with the work of inspecting are all old in the service, and a number of them were connected with the board of trade and engaged in passing upon the quality and condition of grain even before the state department was founded, forty years ago. The others have all worked their way up to their present position from those of messengers and helpers on the tracks and have been carefully schooled in the profession. The average length of service of the supervising inspectors employed in the department is over thirty-four years, of the office inspectors twenty-eight years, of the second assistant inspectors twenty-two years, and of the third assistant inspectors, those of more recent promotion from the ranks of helpers, ten years.

#### *Supervising Inspectors*

The supervising inspectors are men chosen from the ranks of inspectors because of their evenness of temperament, their accuracy of judgment and their expert knowledge of grain, and the inspectors who have attained this position in the Illinois department are men who have been in the service for a long period of years. In this way the work is so directed that, although the grain is received from many different parts of the country, and is grown under diverse conditions of soil and climate, the average quality and market value of any particular grade is substantially the same in each of the many public warehouses in which it is stored, and may be, as it

daily is, confidently purchased by Eastern and European dealers with no other knowledge or guarantee of its quality than the certificate of this department.

The necessity and importance of this constant supervision is more apparent when one remembers that the responsibility of the department does not cease with the affixing of the original grade, but that the millions of bushels of grain going into store must also be inspected out, that the buyer as well as the seller must be satisfied, and that there is safety only along the line of exact and inflexible justice to all parties concerned.

#### *The Committee on Appeals*

Upon the appeals committee of the state grain department devolves the duty of passing final judgment upon any disputed consignment of grain. After a car or vessel has been inspected and the inspection sustained by the supervising inspectors, the shipper, the consignee or the purchaser of the grain may yet submit the entire matter to the committee of appeals. The duty of this committee is to visit the car or vessel, obtain and examine fresh samples, and the judgment of a majority of its members as to grades is final and not subject to further review. Under the laws of Illinois the committee of appeals is appointed by the board of railroad and warehouse commissioners, and must consist of three competent and discreet persons experienced in the qualities of grain, not connected with the inspection department, and not in any manner engaged in the buying or selling of the grain. The members of the appeals committee, as well as all inspectors, are required to execute bonds in the penal sum of \$5,000 to the department as a protection to the owners of grain against loss from neglect of duty or a careless or wilfully improper inspection.

#### *The Department*

The position of the Illinois inspection department in its relation to the public is one of peculiar difficulty and responsibility. It stands as an arbitrator between buyer and seller, between producer and consumer, and practically fixes the value of the immense quantities of grain passing under its supervision. At times it has been subjected to violent pressure in one direction from the receivers

and again in a contrary direction from Eastern and foreign buyers, and to harsh and often unmerited criticism from both.

Notwithstanding the criticism that has been voiced against it, the aim at all times of those in charge has been to secure such fair interpretation and impartial application of existing rules as to do exact justice to all parties interested and at the same time to maintain the present enviable reputation borne by the certificates of the department in the markets of the world. The reputation of Chicago inspection has been of slow and steady growth, has practically changed the business methods of the grain trade wherever American cereals are consumed, and it is not too much to say that the pre-eminence of Chicago as a grain market is due in a great measure to the public confidence in the integrity and accuracy of the work of her inspectors as well as to her favorable location, her unsurpassed facilities or the push and enterprise of her citizens.

*The Influence of Civil Service on the State Grain Inspection  
Department of Illinois*

As a result of a law passed by the last legislature of Illinois (No. 47) the Illinois state grain inspection department passed under civil service July 1, 1911. The members of the department, as well as those who are connected with it in any way, recognize that civil service is and will be a great addition to the efficiency of the department. Hereafter a civil service examination of candidates must precede both the filling of vacancies and promotions in the department. These examinations are conducted by a committee appointed by the civil service commission. This fact lends an incentive to all employees to become more efficient, which, in turn, adds strength to the department. To conduct the proper inspection of grain an inspector must be both intellectual and well trained; the latter requisite calls for years of experience in the department. To secure and hold such men, permanency of position must be assured them. The laws of civil service make this possible.

The official examiner is appointed by the civil service commission and the attention which he gives the department will be a great factor in promoting zeal for betterment.

The chief inspector is no longer hampered by political pressure. Those who wish positions in the department will apply to the civil service commission. Employees of the department are not subject

to the whims of the politicians. Their only requirement is to do their work well and to the best of their ability. One of the requirements of a civil service employee is that he should not be factionally connected with politics. The benefit of such a requirement is that his interest, time and attention are not taken from his work. For these reasons and many others it is expected, and in part the expectation is realized, that civil service will render more satisfaction and be more efficient for all concerned.



## THE CROP REPORTING SYSTEM

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On or about the eighth of each month a report is issued by the Bureau of Statistics of the United States Department of Agriculture concerning the state of crops on the first of the month. The important influence which the size of crop production exerts, not only upon the markets for specific products considered but upon general business activity, gives a peculiar interest and value to these reports; inasmuch as they furnish the most comprehensive and adequate indications of probable future supplies, several months before harvests and the movement of crops.

Of the many products of the farm, the four, namely, wheat, corn, oats, and cotton are generally known as "speculative" crops, because there are well established markets for trading in future deliveries of these products. Owing to the influence of Government crop reports upon prices and the ease of speculating in these four products, special precautions are observed in the preparation and issuance of such reports to prevent any person securing an undue advantage therefrom.

The offices of the Bureau of Statistics, where the crop reports are prepared, are located on the second floor of the main building of the Department of Agriculture, situated in the beautiful, quiet park, or mall, between the capitol and the Washington monument. Here a Crop Reporting Board, consisting of the Chief of the Bureau and four assistants, prepares the crop report, or such part of the report as relates to the "speculative" crops. During the session of the board no communication is allowed between the bureau and the outside, except through the Secretary of Agriculture. All doors are locked and doorkeepers are stationed to prevent persons entering or leaving. Even the telephones to the bureau are disconnected.

Shortly before the time previously announced for the issuance of the report, fifteen or twenty newspaper representatives, or others interested in the report, gather about the corridors, ready

to receive the report as soon as issued. About a minute before the time set, the Secretary of Agriculture and the Chief of Bureau appear, the chief with about twenty-five typewritten copies of the report. These are spread out upon a long table, printed side downward, and folded copies handed to operators of the Western Union and Postal Telegraph companies, which have branch stations at the entrance of the Bureau. Each newspaper man places his hand upon one copy, ready to grab and run at the word "Go," which is called by the Chief of Bureau at the instant announced for the issuance of the report. Within less than five seconds every reporter has disappeared from the corridor, every available telephone is being used to transmit the report, and the telegraph companies are sending it broadcast. Within fifteen or twenty seconds the report is being read in New York, Chicago, and other market centers, perhaps causing much excitement and readjustment of prices, a striking contrast to the calm and serenity which surrounded the preparation of the report.

Government crop reports, even such portions as relate to acreages and yields, are not the result of actual farm-to-farm canvass or enumeration, but are the results of a combination of a large number of estimates, or personal judgments of conditions, each estimate covering a more or less indefinite area, systematically collected, compiled and averaged.

An important consideration concerning the value of crop reports is their timeliness; that is, their object is to furnish reasonably accurate information concerning crops before they have been completely marketed or consumed. A complete census is vastly more costly and requires so much time that the results are not known until the crop has passed into history. Many tests have proven that for comparative purposes crop reports so collected are almost as accurate as a census.

The first appropriation for collecting agricultural statistics by the Department of Agriculture was provided for by the act of February 25, 1863, which was made in bulk for the work of the department, amounting in all to \$90,000. The then Commissioner of Agriculture allotted a part of this amount for collecting agricultural statistics, and appointed a statistician for that purpose. For the fiscal year ended June 30, 1865, the first distinct and separate provision was made for collecting agricultural statistics

for information and reports, and the amount of \$20,000 was appropriated. From an allotment of a few thousand dollars each year at first, the crop-reporting service has been evolved and enlarged into the Bureau of Statistics of the Department of Agriculture, with an annual appropriation of about \$225,000.

The three principal inquiries made by the Crop Reporting Service, concerning each important crop are, first, the area planted, made immediately after the planting season; second, the condition of the crop, made monthly during the growing period; and, third, the yield per acre, made at harvest time. The total production is readily obtained by multiplying the estimated yield per acre by the estimated acreage.

Several other, but minor, inquiries are made at proper times in the year; these include quality, prices, stocks on hand, and amount shipped from counties of production.

The acreage of a crop is obtained by applying to the acreage of the preceding year an estimated percentage of increase or decrease. The form in which the question is asked of the correspondents and agents of the bureau, whose answers form the basis of the bureau's estimates, is as follows: "Acreage—What is the acreage planted this year [in the territory covered by correspondent or agent] compared with last year, in per cent; in representing acreage in comparison with last year, 100 is to represent the acreage last year." If the acreage last year in any state were 1,300,000 and the acreage this year were estimated at 110 per cent of last year's acreage, 1,430,000 would be the estimated acreage for this year. Last year's acreage was obtained by applying a percentage to the acreage figures of the preceding year, and so on from year to year. A new base, or revision, is made every ten years, from the census. The Bureau of the Census of the Department of Commerce and Labor, last year took a census of the crops grown in 1909, which included their acreages. The results for all states have not yet been completed; but when complete they will be used by the Bureau of Statistics as the acreage for 1909. The bureau will then revise its estimate of 1910 by applying to the census figures of 1909 the estimated percentage which the 1910 crop was of the 1909 crop; and similarly will apply to the revised estimate of acreage in 1910 the estimated percentage which the 1911 crop was of the 1910 crop, to obtain a revised estimate of acreages in 1911. The acreage in 1912 will be

obtained by applying a percentage to the 1911 figures, and so on from year to year, until a revision can be made, based upon a new census.

It may be observed that if an error is made in the estimated change of acreage from any one year to another, it is continued from year to year, until the next revision; that is, the method of obtaining the acreage of crops is subject to "cumulative errors." In the past a revision has been made, based upon a census, every ten years. Provision has been made for a census of agriculture every five years in the future, instead of ten. Such frequent revision will prevent any wide departure arising from "cumulative errors." A comparison of the acreage of wheat, corn, and oats, as estimated by the Bureau of Statistics in 1909 and as returned to the census, in the states in which the census is practically complete, comprising more than one-half the total area in the United States, indicates that the estimate of the Bureau of Statistics of corn acreage in 1909 was excessive by 2.6 per cent, the wheat acreage excessive by 4.0 per cent, and the oats acreage deficient by 5.4 per cent.

The conditions of crops are reported in the form of a percentage, the base, or one hundred, being called a "normal." The form in which the question is asked of correspondents and agents of the bureau is: "Condition—normal growth and vitality giving promise of a full crop being represented by 100—per cent?"

A normal condition may be defined as a condition that will produce a normal yield, if such condition is maintained until harvest. But what is a normal yield?

Most farmers know from experience approximately what their fields ought to produce, with the usual mode of farming, with normal weather conditions, and without unusual loss from disease, insects, or other injurious influences. A yield under such favorable, though not extraordinary conditions, would be a normal yield, which is more than an average yield but less than a maximum possible yield. A condition which may produce a normal yield, as thus described, is a normal, or one hundred per cent condition.

A normal yield for one farm or section may vary widely from that for another. On one field a normal yield per acre of corn might be eighty bushels, and on another field twelve bushels. A normal yield of corn for one state is more than forty bushels per acre, for another state it is less than fourteen bushels.

The condition of a crop at a given date is expressed by the percentage of a normal yield which may be produced if no change in the condition or status of the crop occur from the given date to the time of harvest. For example, if the condition of the wheat crop on June 1 were such that, with no change in condition—that is, normal influences from that date to harvest—only three-fourths of a normal yield could be expected, the condition would be reported as seventy-five per cent; if only one-half a normal crop could be expected, the condition would be reported as fifty per cent; if ten per cent more than a normal yield could be expected, the condition would be reported as 110.

The purpose of crop condition reports is to estimate probable future supplies under prevailing growing crop conditions. It is assumed that average conditions at any time are indicative of average yields per acre; that conditions above an average at any time are indicative of yields above the average; and conditions below the average at any time are indicative of yields below the average. If at any time the condition of a growing crop is five per cent above the average condition for such time, it is assumed that the yield is more likely to be five per cent above the average yield than any other amount. If the condition at any time is ten per cent below the average for such time, it is assumed that the yield is more likely to be ten per cent below the average than any other amount.

The process in the interpretation of condition figures may be explained by an example. The condition of corn on July 1, 1911, was 80.1 per cent of a normal condition; in the last five years the condition has averaged eighty-five per cent of a normal condition; thus the condition on July 1 is 5.8 per cent below the average condition (80.1 being 94.2 per cent of 85), and suggests a yield of 5.8 per cent below the average. In the last five years the yield averaged about 27.1 bushels; 94.2 per cent of 27.1 bushels ( $94.2 \times 27.1$ ) is about 25.5 bushels; therefore conditions are said to indicate a yield of 25.5 bushels. That is, if the condition of the corn crop be 5.8 per cent below the average at harvest time, a yield of 25.5 bushels is the most reasonable expectation; if less than the average adversity befall the crop before harvest, a larger yield may be expected; if more than the average adversity befall the crop, a yield less than 25.5 bushels may be expected.

The yield per acre is obtained by simply asking the agents and



\*correspondents to estimate the average yield per acre in bushels of grain, pounds of cotton, etc., in the section of the country covered by the agent or correspondent.

The principal sources of information upon which the crop reports are based are reports of agents and voluntary correspondents scattered throughout the United States. The crop data are collected in quadruplicate; the state is regarded as the unit in the compilation of the reports. The Statistician (and the Crop Reporting Board, for wheat, corn, oats and cotton), therefore, is provided with four averages for each item and each state, each average being the result of the compilation of all the returns of the several sources of information. These four sources are as follows:

First, township correspondents, second, county correspondents, third, state statistical agents, and fourth, special field agents.

Township correspondents are persons who, upon request, voluntarily answer questions concerning crops, on printed schedules, mailed to them monthly by the Bureau of Statistics. There are about 32,000 in the United States. In the more important agricultural sections the average distance between correspondents is five to eight miles. Each correspondent reports upon the state of crops in his vicinity as he sees them. The reports of all the township correspondents of a state are combined to obtain an average for the state; that is, a straight average is taken of all returns from a state.

The county correspondents, like township correspondents, are voluntary reporters, but report for their entire county instead of their immediate vicinity. Each county correspondent is supplied with stationery and government franked envelopes to make personal inquiries throughout his county, so as to enable him to make a report for the whole county. There are about 2,800 agricultural counties in the United States. In obtaining the average for the state from the reports of county correspondents, each county report is weighted according to its relative importance of the county in the production of the crop reported upon. If one county has approximately 20,000 acres of corn and another county but 1,000 acres, the one is given a weight of twenty and the other one, when corn is reported upon. That is, a weighted average is taken of the returns of county correspondents to obtain the average for the state. The reports of township correspondents and of county correspondents are mailed direct to Washington.



State statistical agents are persons who devote a portion of their time, at a small salary, varying according to the importance of the state from \$300 to \$1,100 per annum, to reporting for the state as a whole the same information as is asked of township and county correspondents. Each state statistical agent maintains a corps of voluntary correspondents, from which to collect this information, the number of such correspondents in all the states being about 15,000. State agents are provided with schedules and stationery for this purpose. The state agents in the larger states have their state divided into about nine sections; a straight average is made of all the reports received from a section, to obtain the average for the section; and a weighted average is obtained for the state by giving to each section average a weight proportionate to its relative importance in the state.

The fourth regular source of information is reports from the special field agents. The entire United States is divided into about fifteen districts, comprising about three states in each district. A traveling field agent is assigned to each district. He devotes his entire time to inspection and investigation of crop conditions; he travels systematically throughout his territory, viewing crops, interviewing various parties able to impart information concerning crops; and he reports for each state as a whole, with notes and comments, data concerning crops similar to those given by other classes of correspondents.

In addition to these four regular sources of information, the Bureau of Statistics maintains several special lists which are used occasionally for special inquiries; for instance, when information concerning the yield per acre of wheat is desired, schedules asking for this information are sent to a special list of mills and elevators; when the yield per acre of cotton is desired, schedules of inquiries are sent not only to the four regular classes enumerated, but to every ginner, of which there are about 30,000, to a special list of cotton growers, asking for the yield per acre on their individual farms, and also to a list composed of merchants, bankers, cotton factors, and others in the cotton section interested in the cotton crop. The total number on all lists is about 150,000.

It is impossible with the means at hand to estimate annual production of every product grown. The Bureau therefore confines its efforts in estimating acreages and yields to twelve of the most

important crops, wheat, corn, oats, cotton, hay, potatoes, barley, rye, flax, rice, buckwheat, and tobacco. These, however comprise about ninety-five per cent of the acreage and eighty per cent of the value of all crops. Many minor crops such as beans, peanuts, onions, cabbages, etc., for which estimates of actual production are not given, are nevertheless reported upon as to condition of growth and as to percentage of a full crop produced.

After the reports of township correspondents and county correspondents relating to important crops have been tabulated upon large sheets, but before they have been added and averaged, each sheet of an important state is cut into two parts in such a way that no name of county, state or other mark to indicate the state to which it belongs is left upon the part containing the figures, except that both parts are given a like number by the Chief of Division, and the portion with the names of counties and state kept in a locked drawer. This precaution is to prevent any clerk from obtaining advance knowledge concerning the results for any state.

The reports from special field agents and state statistical agents are mailed in special envelopes or telegraphed in cipher, to the secretary, who keeps them in a securely locked box until the morning of the report. When the board has assembled, the reports regarding the speculative crops from state and field agents are delivered by the secretary, opened and tabulated. The figures by states, from the several classes of correspondents and agents are placed in convenient parallel columns, a separate sheet being used for each separate crop or question. (See Exhibit A.) The board is thus provided with several estimates for each state and each crop, made independently by the respective classes of correspondents and agents of the bureau. Notes and comments of agents and weather reports are read. With all these data before the board, each individual member computes independently, on a separate sheet, or final computation slip, his own estimate of the acreage, condition, yield, or whatever subject is being considered. The results obtained by each member are brought together and compared, state by state, and discussed by the board under the supervision of the chairman and the final figures for each state decided upon. (See Exhibit B.)

The estimates by states, as finally determined by the board, are weighted by figures proportionate to their relative importance, the results being a true weighted average for the United States for

each subject. Other crops than wheat, corn, oats, and cotton are prepared in the same way except that the entire board does not review them.

As quickly as the board determines upon the final figures by states and the averages for the United States have been obtained by expert computers, a summary is set up on a duplicating machine, and copies of the summary are given to the public at the appropriate time in the manner already described. About two thousand copies of the summary are mailed at the same time to newspapers, and various organized bodies interested in the reports and soon thereafter the details of the report are published in the "Crop Reporter," which is mailed gratis to any person requesting it. An edition of 170,000 copies is published monthly.

As the object of crop condition reports is to throw some light upon the question of probable future supplies, it may be of interest to note what relation exists between estimates of condition and the ultimate yield as finally estimated. This is shown graphically in a chart (Exhibit C) which gives the condition of the corn crop on October 1, yearly, from 1890 to 1909, inclusive, and the yield per acre yearly, during the same period, as finally estimated. It will be observed that there is a reasonably close approximation.

Crop reports have a steadying effect upon markets by discrediting false reports which would otherwise circulate widely and adversely affect market conditions. By increasing knowledge of supplies and lessening the risks, the cost of distribution of a crop is reduced. If the crop reports of the Government be the means of lessening the margin between the price paid by consumers and the price received by producers by one-eighth cent per bushel for wheat, corn, and oats and but one-twentieth cent per pound for cotton, and this is a conservative estimate, the saving to producers and consumers on these crops alone is approximately \$5,000,000 annually.

## EXHIBIT A.—Condition of Corn.

[Sample Sheet]

States and Territories	Field	State	County	Township	Board Members' Estimate
Maine .....		95	95	89	94
New Hampshire ....		89	93	87	89
Vermont .....		85	84	86	85
Massachusetts .....		88	90	88	88
Rhode Island .....		97	101	90	97
Connecticut .....		90	95	89	90
New York .....		82	83	80	82
New Jersey .....	78	79	80	76	78
Pennsylvania .....	79	81	76	77	78
Delaware .....	83	82	92	83	83
Maryland .....	74	78	74	75	75
Virginia .....	83	80	83	81	81
West Virginia .....	63	62	74	69	65
North Carolina .....	83	83	82	83	83
South Carolina .....	88	85	85	84	85
Georgia .....	84	86	86	83	84
Florida .....	83		85	86	84
Ohio .....	78	78	76	75	77
Indiana .....	87	86	87	85	86
Illinois .....	87	87	86	85	86
Michigan .....	75	77	76	79	77
Wisconsin .....	72	75	79	77	76
Minnesota .....	79	81	80	76	80
Iowa .....	82	82	83	82	82
Missouri .....	82	84	83	85	84
North Dakota .....	47		55	53	50
South Dakota .....	73	80	75	72	75
Nebraska .....	68	69	72	70	69
Kansas .....	59	60	61	58	59
Kentucky .....	83	83	82	81	82
Tennessee .....	82	84	82	82	82
Alabama .....	91	88	92	88	90
Mississippi .....	93	91	92	90	91
Louisiana .....	88	88	90	88	88
Texas .....	75	76	70	71	73
Oklahoma .....	48	49	51	48	49
Arkansas .....	88	89	87	88	88
Montana .....		57	53	56	56
Wyoming .....		65	80	60	65
Colorado .....	68	67	67	69	67
New Mexico .....		54	71	55	55
Arizona .....			82	75	78
Utah .....	83	85	90	84	84

EXHIBIT "A"—(Continued)

States and Territories	Field	State	County	Township	Board Members' Estimate
Idaho .....	88	90	91	88	89
Washington .....	76	69	77	74	75
Oregon .....	79	81	85	80	80
California .....		85	87	84	80

EXHIBIT B.—Condition of Corn.

[Sample Sheet]

(Board Members' Estimates)

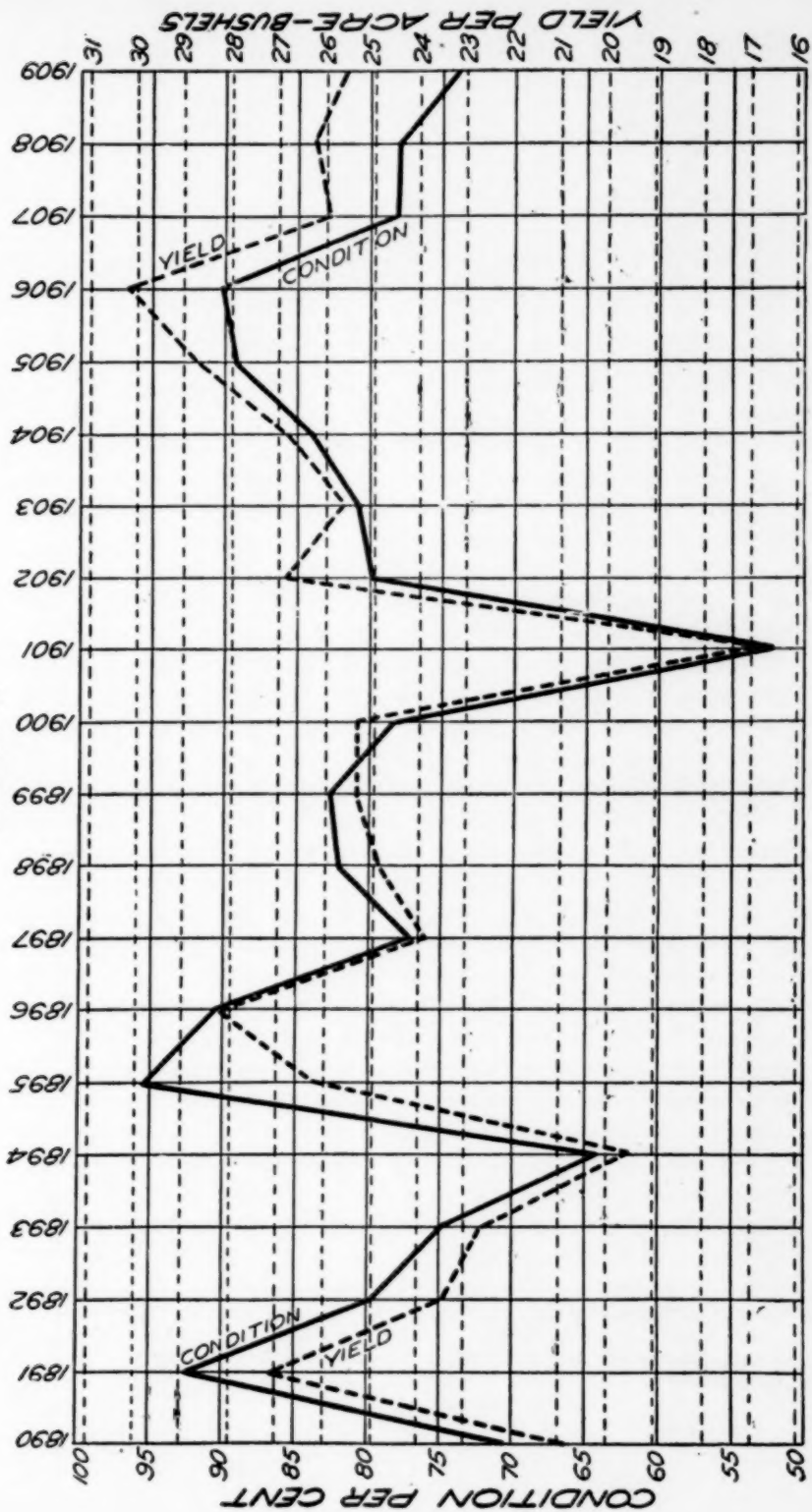
States and Territories	Member A	Member B	Member C	Member D	Final
Maine .....	94	94	93	94	94
New Hampshire .....	89	90	90	89	90
Vermont .....	85	85	85	85	85
Massachusetts .....	88	89	88	89	88
Rhode Island .....	97	96	97	95	97
Connecticut .....	90	91	92	90	91
New York .....	82	82	82	82	82
New Jersey .....	78	79	78	78	78
Pennsylvania .....	78	79	79	78	78
Delaware .....	83	85	84	83	83
Maryland .....	75	75	76	75	75
Virginia .....	81	82	82	81	82
West Virginia .....	65	68	67	67	66
North Carolina .....	83	83	83	83	83
South Carolina .....	85	85	85	86	85
Georgia .....	84	85	84	85	84
Florida .....	84	85	84	85	84
Ohio .....	77	77	77	77	77
Indiana .....	86	86	86	86	86
Illinois .....	86	86	87	86	86
Michigan .....	77	76	76	77	76
Wisconsin .....	76	75	75	76	75
Minnesota .....	80	80	79	79	79
Iowa .....	82	82	82	82	82
Missouri .....	84	84	83	84	84
North Dakota .....	50	53	50	51	51
South Dakota .....	75	73	74	76	75
Nebraska .....	69	70	70	69	69
Kansas .....	59	60	60	59	60
Kentucky .....	82	82	82	83	82

## EXHIBIT "B"—(Continued)

States and Territories	Member A	Member B	Member C	Member D	Final
Tennessee.....	82	82	82	83	82
Alabama.....	90	89	91	90	90
Mississippi.....	91	91	92	92	91
Louisiana.....	88	88	88	88	88
Texas.....	73	72	73	74	73
Oklahoma.....	49	49	49	50	49
Arkansas.....	88	88	88	88	88
Montana.....	56	55	56	56	56
Wyoming.....	65	68	67	65	65
Colorado.....	67	68	68	67	68
New Mexico.....	55	60	58	57	56
Arizona.....	78	79	80	77	79
Utah.....	84	85	86	86	85
Idaho.....	89	90	90	89	89
Washington.....	75	73	74	75	75
Oregon.....	80	82	81	80	80
California.....	85	85	85	85	85



EXHIBIT C.



## CURRENT SOURCES OF INFORMATION IN PRODUCE MARKETS<sup>1</sup>

BY BRUCE D. MUDGETT,

Instructor in Insurance and Commerce, University of Pennsylvania.

### *Sources of Information in the Cotton Market*

Current information dealing with the cotton market may be divided into two classes, based on the point of origin of the data, viz: (1) information concerning production, acreage and condition; and (2) statistics of current prices. The one must emanate necessarily from the area of production; for the other the only source is the exchanges. Cotton, like wheat, is peculiar in this respect that there has developed a most extensive system of trading in futures, and the middlemen on whose shoulders falls the risk of this system find it an economic necessity to discount pending conditions of supply and demand so as to shape their affairs to conform with a season's average condition. Mr. Henry G. Hester, secretary of the New Orleans Cotton Exchange, famous for his cotton reports, speaking of the need of these reports and the amount of dependence that can be placed upon them, says: "Reports of this kind are valuable as indications of the trend of supply and demand, and their contents exert more or less influence as statements of facts bearing upon the basic causes of price fluctuations. All other matters, such as wars and rumors of wars, panics, dear and cheap money, etc., etc., by reason of their bearing upon either the volume of supplies or the extent of demand for an article are collateral. Upon reliable statements of facts the world bases its opinions; these coupled with collateral conditions are the sources of deductions or forecasts of the possible or probable course of future values. To the extent of the reliability of statements of facts, or perhaps it would be more correct to say the amount of confidence reposed in such statements, is the price of an article more or less governed. The fear of the

<sup>1</sup>Only the most important sources of market news could be enumerated for each of the leading markets, and where criticisms have been offered, they have in nearly every case been given to represent the judgments of brokers and dealers, directly interested in the market, as obtained by personal interview or correspondence.

effect of any cause upon the possible supply or possible demand is proven to be more or less grounded by the actual facts as they occur, and while such fears may exert a temporary influence on values, the permanency of such influence is determined only through information concerning actualities."

The extensive area over which cotton is grown is the explanation of the large and complicated organizations which are engaged in reporting on production, condition and acreage of cotton. Greatest of all among these organizations is the United States Government. That the government crop reports have been subjected to just criticism in the past is undoubted. It is just as true that the cause of that criticism has been removed, and that the greatest degree of care is used in compiling and issuing the reports so as not to permit them to become prematurely available to unscrupulous manipulators. Nevertheless there are to-day still a great many brokers who maintain that all persons legitimately concerned in the distribution of the cotton crop would be better off if there were no crop reports issued. A favorite criticism levelled at the reports is that they are, and in their nature can be, nothing more than a guess by a government board; that both weather and acreage reports are used by manipulators and plungers to influence prices, thereby causing more and greater price fluctuations, and producing the very thing they were intended to prevent. Some brokers go to the extent of saying that the trade as a whole would be better off were no reports of any kind ever published. Upon analysis the situation appears to be a struggle between the interests most concerned in the "spot" markets and those interested in the "future" markets. The merchant dealing in the spot market is interested in his commission and therefore is interested in as high a price for the product as he can get. In this he is supported by the producer. The dealer in the future market is the one who makes possible hedging operations on the part of manufacturers and the latter are interested in getting cotton at rock bottom prices. Between these two range the speculator and the manipulator ready to take advantage of a change of price in either direction. It is probable that the time will never come when all of such diverse interests can be wholly satisfied. In the meantime the government crop reports will continue to be published and their publication will have the loyal support of at least a large and influential minority of those interested.



We quote good to choice Penna. at \$5.00 @5.25 ¢ bbl in wood; and western at \$5.25 ¢ 196 lbs in sacks, as to quality.

**WHEAT**—Trade was quiet, but offerings were light, and, with bullish speculation in other home grain centres, prices advanced  $\frac{1}{8}$ ¢ on both spring and winter varieties. We quote No. 2 Red, afloat, at 89 $\frac{1}{2}$ ¢/90 $\frac{1}{2}$ ¢.

#### Car Lots, in Export Elevator.

No. 2 Red.....	91 $\frac{1}{2}$ ¢	92 $\frac{1}{2}$ ¢
Steamer No. 2.....	89 $\frac{1}{2}$ ¢	89 $\frac{1}{2}$ ¢
No. 3 Red.....	88 $\frac{1}{2}$ ¢	89 $\frac{1}{2}$ ¢
No. 1 Northern Duluth.....	1 10 $\frac{1}{2}$ ¢	1 11 $\frac{1}{2}$ ¢
Receipts, Shipments, Stock.		
Girard Pt. Stg. Co. ....	32,856	126,765
Port Richmond.....	—	—
20th St. Elevator.....	—	92,149
23d St. Stores.....	5,000	—
Track.....	5,000	—
Total.....	37,856	218,914

**CORN**—The market for export deliveries ruled firm and prices advanced  $\frac{1}{8}$ ¢, under light offerings and stronger outside advices. Local car lots were also  $\frac{1}{8}$ ¢ higher, under scarcity.

#### Export Mixed, in Elevator.

Close yesterday. 12 M.—Close.

June.....	58 $\frac{1}{2}$ ¢/59 $\frac{1}{2}$ ¢	58 $\frac{1}{2}$ ¢/59 $\frac{1}{2}$ ¢
Export mixed.....	58 $\frac{1}{2}$ ¢/59 $\frac{1}{2}$ ¢	58 $\frac{1}{2}$ ¢/59 $\frac{1}{2}$ ¢
Steamer.....	57 $\frac{1}{2}$ ¢/58 $\frac{1}{2}$ ¢	57 $\frac{1}{2}$ ¢/58 $\frac{1}{2}$ ¢
No. 3.....	56 $\frac{1}{2}$ ¢/57 $\frac{1}{2}$ ¢	56 $\frac{1}{2}$ ¢/57 $\frac{1}{2}$ ¢
No. 4.....	55 $\frac{1}{2}$ ¢/56 $\frac{1}{2}$ ¢	55 $\frac{1}{2}$ ¢/56 $\frac{1}{2}$ ¢

#### Car Lots for Local Trade.

No. 2 yellow.....	62 ¢/62 $\frac{1}{2}$ ¢	—
Steamer No. 2 yellow.....	61 ¢/61 $\frac{1}{2}$ ¢	—
No. 3 yellow.....	58 $\frac{1}{2}$ ¢/59 $\frac{1}{2}$ ¢	—
No. 4 yellow.....	55 $\frac{1}{2}$ ¢/56 $\frac{1}{2}$ ¢	—
Receipts, Shipments, Stock.		
Girard Pt. Stg. Co. ....	—	986
Port Richmond.....	—	—
20th St. Elevator.....	—	—
23d St. Stores.....	4,000	4,000
Track.....	4,000	4,986
Total.....	—	—

Manitoba No. 5 Sdg. .... 42 ¢  
Wheat..... 5 ¢  
Total..... 2 90 ¢ 3 ¢

**CORN GOODS**—Demand is normal and the market rules firm.

Kiln dried yellow meal, ¢ bbl..	2 90 ¢ 3 ¢
do do 100-lb sack, 1 35 ¢ 1 40 ¢	
Gran. yellow meal, ¢ bbl.....	2 90 ¢ 3 20 ¢
Gran. yellow meal, ¢ 100-lb sack, 1 35 ¢ 1 50 ¢	
Gran. white meal, ¢ bbl.....	3 ¢ 3 40 ¢
Gran. white meal, ¢ 100-lb sack, 1 40 ¢ 1 60 ¢	
Yellow table meal, ¢ bbl.....	2 80 ¢ 3 10 ¢
Yellow table meal, ¢ 100-lb sack, 1 30 ¢ 1 45 ¢	
White table meal, ¢ bbl.....	2 90 ¢ 3 20 ¢
White table meal, ¢ 100-lb sack, 1 35 ¢ 1 50 ¢	
White corn flour, ¢ bbl.....	3 50 ¢ 3 60 ¢
White corn flour, ¢ 100-lb sack, 1 65 ¢ 1 70 ¢	
Yellow corn flour, ¢ bbl.....	3 30 ¢ 3 40 ¢
Yellow corn flour, ¢ 100-lb sack, 1 55 ¢ 1 70 ¢	
Pearl hominy, ¢ bbl.....	3 20 ¢ 3 40 ¢
Pearl hominy, ¢ 100-lb sack, 1 50 ¢ 1 60 ¢	
Hominy and grits, ¢ case, 1 20 ¢ 1 35 ¢	

**OAT MEAL**—Is quiet but firm.

We quote in wood—

Ground oat meal, ¢ bbl.....	4 95 ¢	—
Rolls, steam or kiln dried, ¢ bbl, 4 50 ¢ 4 75 ¢		
Patent-Oat, ¢ bbl.....	4 95 ¢ 5 22 $\frac{1}{2}$ ¢	
Pearl barley, in 100-lb sacks, as to quality.....	3 55 ¢ 5 15 ¢	

**TALLOW**—Was quiet and unchanged.

Prime, city, in tins..... 6 ¢ 6 $\frac{1}{2}$ ¢

Prime, country..... 5 $\frac{1}{2}$ ¢ 6 ¢

Dark..... 6 ¢ 6 $\frac{1}{2}$ ¢

Cakes..... 6 ¢ 6 $\frac{1}{2}$ ¢

Grease..... 4 $\frac{1}{2}$ ¢ 5 $\frac{1}{2}$ ¢

Yellow..... 6 ¢ 6 $\frac{1}{2}$ ¢

White..... 5 $\frac{1}{2}$ ¢ 6 ¢

House..... 5 $\frac{1}{2}$ ¢ 6 ¢

Bone..... 5 $\frac{1}{2}$ ¢ 6 ¢

**FEED**—Supplies were small and the market ruled steady, but trade was quiet.

Western beef, knuckles and tenders, smoked.....	19 ¢ 20 ¢
Beef hams.....	26 ¢ 28 ¢
Pork, family.....	18 50 ¢ 19 50 ¢
Hams, S. P. cured, loose.....	12 $\frac{1}{2}$ ¢ 13 $\frac{1}{2}$ ¢
do skinned, loose.....	12 $\frac{1}{2}$ ¢ 13 $\frac{1}{2}$ ¢
do do smoked.....	14 $\frac{1}{2}$ ¢ 16 ¢
Other hams, smoked, city cured, as to brand and average.....	14 $\frac{1}{2}$ ¢ 16 ¢
Hams, smoked, western cured.....	14 $\frac{1}{2}$ ¢ 16 ¢
do boiled, boneless.....	22 ¢ 24 ¢
Shoulders, pickle cured, loose.....	8 ¢ 8 $\frac{1}{2}$ ¢
do do smoked.....	9 $\frac{1}{2}$ ¢ 10 ¢
Picnic Hams, S. P. cured, loose.....	7 $\frac{1}{2}$ ¢ 8 $\frac{1}{2}$ ¢
do do smoked.....	9 $\frac{1}{2}$ ¢ 10 ¢
Bellies, in pickle, according to average, loose.....	11 ¢ 13 ¢
Breakfast bacon, as to brand and average, city cured.....	14 ¢ 19 ¢
Breakfast bacon, western cured.....	14 ¢ 19 ¢
Lard, western, refined, tierces.....	8 $\frac{1}{2}$ ¢ 9 ¢
do do do.....	9 ¢ 9 $\frac{1}{2}$ ¢
Lard, pure city, kettle rendered, in tierces.....	8 $\frac{1}{2}$ ¢ 9 ¢
Lard, pure city, kettle rendered, in tubs.....	8 $\frac{1}{2}$ ¢ 9 ¢

#### OCEAN GRAIN FREIGHTS.

Charter Rates.	Berth Rates.	Picked ports.
Cork for orders.....	—	—
Liverpool.....	—	—
London.....	—	—
Glasgow.....	—	—
Manchester.....	—	—
Leith.....	—	—
Antwerp.....	1 $\frac{1}{2}$ ¢ 2 $\frac{1}{2}$ ¢	—
Rotterdam.....	16 ¢ 17 $\frac{1}{2}$ ¢	—
Hamburg.....	16 ¢ 17 $\frac{1}{2}$ ¢	—
Copenhagen.....	—	—

#### RECEIPTS.

Flour—bbls.....	1,460	Seed—Flax, bush	—
Sack—bbls.....	713,440	Feed tons.....	—
Wheat, bush.....	37,856	Hay, tons.....	330
Corn, bush.....	4,000	Straw, cars.....	1
Oats, bush.....	23,990	Highwines, bbls.....	2,275
Barley, bush.....	5,000	Whiskey, bbls.....	18
Malt, bush.....	—	Wool, bales.....	240
Seed—Clover, bgs.....	—	Cotton, bales.....	—
Timothy, bgs.....	—	Lumber, feet.....	1,075,000

NAMUEL S DANIELS, Editor, 241 Dock St



The government reports are of three kinds: (1) the Weather Bureau reports; (2) reports of the Census Bureau on acreage and on cotton ginned; and (3) reports of the Department of Agriculture published in the "Crop Reporter." The Weather Bureau reports are issued weekly and, as the name indicates, afford an opportunity of getting a line on weather conditions in the regions of the growing crop. The Census Bureau compiles reports of cotton ginned from statements received by it from the gins in active operation.

An unusual example of the accuracy with which these ginning reports measure the cotton crop was given last year (crop year of 1909-1910). The Census Bureau had reported 10,386,000 bales of cotton ginned for the year. When Secretary Hester's report on the crop appeared in September it gave the actual growth for 1909-1910 as 10,389,000 bales, a difference of only 3,000 bales. Needless to say that, while they usually correspond closely, they do not often produce a result like the above. The reports of cotton ginned also give the bureau an opportunity to get a line on the acreage.

Every five years a census is taken of the acreage. This acreage estimate is available to, and is used by, the Department of Agriculture. The first Census Bureau report, issued in June, gives estimated acreage as of May 25th. Thereafter, twice monthly, the bureau reports on the amount ginned. In March the total quantity ginned is reported. The Department of Agriculture through the crop reporting board makes six reports yearly on cotton. The first, issued on June 2d, reports the acreage and condition of the crop on May 25th, by states. Thereafter, in July, August, September and October, the condition of cotton is reported for the twenty-fifth of the month previous. The last report, issued about December 10th, publishes the estimate of the total production of cotton by states for the year.

Private reports on cotton fall heir to much the same criticism that is directed against the government reports. Among the total number will be found many which are little more than guess work, and in which no credence can be placed. But, on the other hand, some of the private reports are prepared with the utmost care that large and costly organizations can give and deserve the confidence reposed in them.

A great many trade newspapers collect their own cotton statistics. Among these the reports of the "New York Journal of Com-



merce" are probably most widely known. They are collected by means of a large corps of correspondents located all over the cotton states, who send in their reports by letter or by wire to headquarters. The methods of the "Journal" are molded very much after those of the Department of Agriculture in the preparation of its crop reports. Much the same methods are followed by the "New York Commercial." It publishes currently the usual statistics, but in addition issues four special crop editions during the season, often anticipating the government estimates by days and coming remarkably close to the figures of the latter. These special editions refer to "acreage planted," "prospective yield," "condition" in September, and "total crop" early in December.

There are a number of newspapers in the South which report on the growing cotton crop, some of them for the crop as a whole, some of them confining their attention more to local conditions. The "New Orleans Times-Democrat" maintains correspondents in every section of the cotton belt and through them obtains and publishes comprehensive reports and a summary. In December, a few days prior to the publication of the government's estimate, the "Times-Democrat" prints its estimate of the season's growth, and in years past this result has borne a very close correspondence with the actual figures appearing later.

Among individuals and firms publishing private reports on cotton, the best known are Henry G. Hester, secretary of the New Orleans Cotton Exchange; Oscar K. Lyle, of the firm of S. B. Chapin & Co., New York, and the Mercantile Cotton Crop Reporting Corporation, New York, which latter organization publish the reports formerly issued by Mr. Theodore H. Price. Secretary Hester's report is an annual one, coming out on September 1st and treating of the cotton crop to the close of August. Ordinarily, annual reports are looked upon as of historical importance only, but this report, because of its exhaustive nature and because of the confidence reposed in it, is eagerly watched for and undoubtedly exercises marked influence on the market. Secretary Hester's data are obtained from transportation companies, manufacturers, exchanges, boards of trade and expert correspondents on both sides of the Atlantic. Much of the detailed data obtained from manufacturers, railroads, etc., is of a confidential nature, but as he himself says, "Once it became known that the effort of the statistician was to

arrive at correct aggregates and not to make public the affairs of specific concerns there has been little or no hesitancy in the furnishing of details." His report covers an analysis of the sources of supply with a history of the year's crop compared with previous years; the distribution of the crop to American mills both North and South, the overland movement and exports; and detailed stocks on hand.

In the case of Oscar K. Lyle's crop observations no blank forms are used, making a description of his methods very difficult. His results, however, are among those which are accepted as authoritative estimates.

## COTTON (ARKANSAS)

1908	PAST YIELD 1907	1906	County	Average Yield	Proportional Quotient
7,681	5,269	7,313	Arkansas	6,754	.78
22,008	22,328	25,290	Ashley	23,208	2.65
4,957	3,029	3,780	Baxter	3,922	.45
932	393	692	Boone	692	.07
5,407	4,337	5,237	Bradley	4,993	.57
5,555	4,568	5,076	Calhoun	5,067	.57
27,702	25,240	25,968	Chicot	26,203	2.76
9,877	8,757	10,647	Clark	9,760	1.12
15,118	9,688	12,117	Clay	12,307	1.43
5,004	3,011	4,119	Cleburne	4,033	.45
8,671	6,368	7,936	Cleveland	7,658	.87
17,747	17,243	22,934	Columbia	19,308	2.20
21,256	14,403	20,418	Conway	18,692	2.13
13,984	7,667	11,497	Craighead	11,149	1.26
14,097	14,728	16,656	Crawford	15,160	1.74
32,605	27,545	24,074	Crittenden	28,074	3.17
10,460	8,245	9,489	Cross	9,308	1.06
5,404	3,897	4,717	Dallas	4,673	.53
12,125	12,014	15,162	Desha	13,100	1.52
19,983	14,595	19,284	Drew	17,950	2.05
20,351	13,289	19,960	Faulkner	17,867	2.04
14,972	11,639	12,640	Franklin	13,084	1.49
4,785	2,494	3,714	Fulton	3,664	.42
2,381	1,675	1,169	Garland	1,742	.19
4,456	2,439	2,659	Grant	3,185	.36
9,696	6,416	9,336	Greene	8,483	.96
15,164	16,038	24,054	Hempstead	18,419	2.10
6,794	4,443	3,692	Hot Spring	4,976	.58
10,067	9,255	11,347	Howard	10,223	1.17
17,294	7,730	14,287	Independence	13,103	1.49

## COTTON (ARKANSAS)—(Continued)

1908	PAST YIELD 1907	1906	County	Average Yield	Proportional Quotient
6,605	3,512	5,101	Izard	5,073	.57
34,882	17,395	24,419	Jackson	25,532	3.01
45,834	35,203	40,129	Jefferson	40,389	4.61
13,101	9,207	9,846	Johnson	10,718	1.24
4,790	8,284	13,006	Lafayette	8,693	1.00
21,281	12,908	14,346	Lawrence	16,178	1.83
32,282	21,411	22,616	Lee	25,436	2.89
16,495	15,301	18,319	Lincoln	16,705	1.90
6,438	10,602	15,391	Little River	10,820	1.23
23,343	16,900	18,736	Logan	19,659	2.46
46,246	27,540	31,651	Lonoke	35,145	3.99
2,692	1,551	1,860	Marion	2,034	.22
3,328	5,993	11,432	Miller	6,917	.79
36,747	28,057	29,355	Mississippi	31,286	3.60
25,095	15,121	17,524	Monroe	19,246	2.43
4,313	3,655	4,156	Montgomery	4,041	.47
11,374	10,895	15,003	Nevada	12,424	1.41
605	351	533	Newton	496	.06
9,724	8,482	10,145	Ouachita	9,450	1.08.
6,493	3,582	5,948	Perry	4,674	.53
36,032	25,219	23,776	Phillips	28,342	3.22
3,930	4,411	4,468	Pike	4,269	.50
5,638	3,359	4,248	Poinsett	4,414	.52
3,231	2,547	2,702	Polk	3,826	.43
23,284	13,939	18,147	Pope	18,456	2.10
9,763	7,757	9,392	Prairie	8,970	1.02
23,279	15,580	18,142	Pulaski	19,000	2.15
12,231	6,051	6,989	Randolph	8,427	.95
27,483	22,564	20,310	St. Francis	23,452	2.67
5,231	3,722	4,798	Saline	4,587	.52
7,134	4,969	5,984	Scott	6,029	.69
2,099	1,376	2,101	Searcy	1,859	.22
11,547	9,364	10,811	Sebastian	10,577	1.20
7,212	7,318	9,512	Sevier	8,014	.91
5,230	2,706	4,309	Sharp	4,081	.45
2,237	1,175	2,084	Stone	1,832	.20
14,351	16,137	17,812	Union	16,100	1.93
6,522	4,286	4,933	Van Buren	5,247	.59
18,685	13,292	16,002	White	15,993	1.82
29,913	23,663	23,196	Woodruff	25,590	3.01
22,860	17,723	19,766	Yell	20,116	2.30
.....	.....	6	All other	2	....
996,093	751,851	894,268		880,936	100.00

The method used by the Mercantile Cotton Crop Reporting Corporation for obtaining their data is that noted in several previous instances, namely, the use of a great number of picked correspondents located in the cotton producing area. A postal is addressed to each one of these asking for estimates. In compiling this data a system of weighing is used, and it certainly contributes to a result more scientifically accurate than could a simple arithmetic average of all the replies received. The county is the basis on which the results are tabulated. For each state a blank form is used like the one here reproduced for Arkansas, giving the yield of cotton for each county for three years past. The average of these three years is then computed; another column giving the percentage which the average for the county is of the total average crop for the three years. This column of percentages, then, gives the relative weight that the returns of each county are going to bear in making up the total for the state. Ashley county, for instance, would be credited with 2.65 per cent. of the yield, calculated on the state. Pike county would be credited with only .50 per cent. Having obtained a figure for each state, these are again weighed for the final or United States result. Florida would be credited with one per cent, while Texas would have twenty-eight per cent. If estimates of the cotton crop are valuable, then the scientific method used above for arriving at a correct estimate is to be encouraged.

Opposed to this way of arriving at results will be found many to which the application of the term scientific would be a travesty. For instance, among doubtful methods of arriving at results the following examples might be cited: Inquiries are sent to dealers, buyers, farmers, etc., asking the simple question, "How much cotton will your county raise this year?" To the sum of the results thus received seven and one-half per cent is added, based on the observations that these correspondents generally underestimate the crop by that amount. This latter result is made the basis of a published estimate on the size of the crop. Many reports will be found which are based on no more trustworthy methods, and their existence justifies the suggestion that a careful description of method is due from any organization which issues reports to those who receive reports and base their operations on them. More diligence in this matter would mean less opportunity for manipulating the market.

In addition to the statistics thus far discussed concerning the

cotton crop, brokers, producers and manufacturers are interested in current prices on the exchanges. This subject needs only a mention here, for each exchange individually compiles its own data, and by means of the ticker, telegraph and cable, and later the newspapers, this information is immediately disseminated to all interested parties.

#### *Sources of Information in the Cereal Markets*

Current information in the cereal markets is sought more eagerly than any other data in the produce markets, owing to the commanding importance which grain occupies. The system of trading in futures is greater in wheat even than it is in cotton, and just in proportion as it is greater there is greater demand for data as to current happenings.

It was to forecast the probable wheat crop that the government crop reports were first undertaken. From a small beginning they have grown in scope until to-day they cover almost everything grown in the United States that can be considered of commercial importance. Those parts of the reports dealing with the cereal crops which are traded in on exchanges are as follows: The March report gives the stocks of grain in farmers' hands; the distribution and consumption of corn, wheat and oats; and the average natural weight of wheat and oats. The April schedule, the first which gives condition reports, deals with the condition of winter wheat and rye. In May further reports are made upon the condition of winter wheat, rye, meadow lands and spring pasture. It also covers the portion of the original acreage of winter wheat that has been, or will for any reason have to be, abandoned. In June the acreage of all the important crops is reported on, chief among which is spring wheat. The condition of wheat, oats, barley, rye, clover and spring pasture is dealt with. The July schedule gives the acreage planted to corn; the stocks of wheat in farmers' hands; and the condition figures as before. Condition figures are reported for all crops up to September, when most of the smaller cereals are harvested. The condition of corn is reported on in October, and in the annual report for December the condition of winter wheat and rye planted for the following year's crop is dealt with. In addition to these data, the estimated average yield of winter wheat and the stocks of oats in farmers' hands are dealt with in August; the average yield and quality of spring wheat, barley, oats and rye in October; and the

average yield per acre of corn in November. The annual report of the crop reporting board comes out in December, when all crops are harvested and it is possible to obtain trustworthy estimates of the total crops. The production and prices of all the principal crops are dealt with in this schedule, together with the acreage of winter wheat and rye sown for the crop of the following year. The government's weekly weather reports are watched in the grain markets equally as closely as in cotton. In fact, some brokers will go so far as to say that a careful observance of weather conditions throughout the producing area will enable them to anticipate very closely the result of a coming crop report.

Aside from the government reports there are three agencies for securing news in the grain markets. They are (1) the grain exchanges and allied organizations; (2) large commission and brokerage firms, which make a canvass by correspondence; and (3) the private crop expert, the latter analogous to those already noted in the cotton market.

The grain exchanges annually spend enormous sums of money in compiling statistics of their own dealings. Nearly every exchange maintains a committee whose duty this shall be. The practice of the Philadelphia Commercial Exchange is typical. Its by-laws state that "The committee on information and statistics shall have supervision of the library of the exchange, and all matters pertaining thereto. . . . It shall, unless otherwise directed, have charge of newspapers, market reports, telegraphic and statistical information for the use of the exchange; and it shall be the duty of the said committee to organize plans for obtaining regularly, and at the earliest moment, such reliable information as may affect the value of articles dealt in by the members of the exchange."

The Philadelphia exchange publishes each day a record of stocks held in elevators, vessels or cars loaded, and daily receipts and shipments. A reduced facsimile of one of their daily reports is shown on page 106. Some of the exchanges go further and attempt to compile summaries. The Chicago Board of Trade, for instance, compiles figures of visible supplies of grain. But in this immediate connection the work that is best known and has most general acceptance throughout the country is that of "Bradstreet's Trade Review." Bradstreet's collects the figures of stock of grain on hand at the grain supply centers by means of agents and the use of



the telegraph, and the total is published in the journal of that name. Visible supply figures are also published weekly by "Dun's Review."

The greatest organization of all, either in this country or abroad, dealing with the grain exchanges as a whole is Broomhall's Agency. Broomhall's Agency has become the official representative of practically every important grain exchange in the world. Its method of operation is well described by Mr. G. P. Broomhall, the American representative, in a letter to the writer: "We have no regular forms which we send to our correspondents, but our agents send us advices, some daily, others weekly, either by mail or wire and also by cable. We have, for instance, about three hundred agents and correspondents scattered all through the important grain-producing countries, and any change in weather conditions, say in Russia or Argentine, is at once cabled to our Liverpool office, from which point it is again disseminated, in America, for instance, by this office" [the New York office] "to private subscribers here at New York, and they in turn wire the information over their private wires to Chicago and the far West. We are the foreign correspondents for the Chicago Board of Trade, and since January 1st this year [1911] are supplying the New York Produce Exchange with all their foreign information. The Buenos Ayres Grain Exchange also receives our foreign grain service, and also the Liverpool grain exchanges.

"All the largest exchanges in the world which handle grain use our foreign cabled grain service. We have agents on all these markets and through them we obtain the official prices posted on them, and they are in turn sent to Liverpool and again redistributed to other exchanges. Statistical information, such as exports, receipts, shipments, are also gathered by our agents and sent to Liverpool, who in turn have them tabulated and sent through the various countries. For instance, each Saturday afternoon I personally compile the shipments of wheat, corn and flour, that is, the amount of grain shipped from the different ports in this country for the week. We have agents at all the ports on the Atlantic and Pacific seaboard and they send me in by mail and wire the amount of grain shipped for the week, and after condensing same I cable this information to my Liverpool office, and they, after receiving the returns from our agents in Russia, Argentine, India, Australia and any other exporting countries, are able by this to compile the

THURSDAY: June 8th. 3 P. M. 1911

June—550 at 10.82,	
July—600 at 10.90, 1000 at 10.88, 350 at 10.92,	
10.98, 310 at 10.80, 750 at 10.93, 1000 at 10.91	
September 650 at 10.70, 500 at 10.88, 500 at 10.69, 500 at 10.70, 300 at 10.60, 300 at 10.68.	
December—250 at 10.50, 1000 at 10.32, 350 at 10.48, 1250 at 10.50.	
January—2000 at 10.11	
March—200 at 10.03, 500 at 10.50, 700 at 10.31, 900 at 10.50.	
Total, 18,550 bags.	

Arrivals of Coffee in the U. S.				Arrivals of Coffee in the Principal Ports of Europe.			
1910-11		1910-11	1909-10	1910-11		1909-10	1908-09
Exports	Imports	Quantity	Value	Quantity	Value	Quantity	Value
July.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Aug.....	94,749	88,198	297,275	317	381,424	435,011	435,011
Sept.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Oct.....	94,749	88,198	297,275	317	381,424	435,011	435,011
Nov.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Dec.....	94,749	88,198	297,275	317	381,424	435,011	435,011
Jan.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Feb.....	94,749	88,198	297,275	317	381,424	435,011	435,011
Mar.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Apr.....	94,749	88,198	297,275	317	381,424	435,011	435,011
May.....	104,144	64,553	292,697	317	381,424	435,011	435,011
June.....	94,749	88,198	297,275	317	381,424	435,011	435,011
July.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Aug.....	94,749	88,198	297,275	317	381,424	435,011	435,011
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Mar.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Apr.....	94,749	88,198	297,275	317	381,424	435,011	435,011
May.....	104,144	64,553	292,697	317	381,424	435,011	435,011
June.....	94,749	88,198	297,275	317	381,424	435,011	435,011
July.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Aug.....	94,749	88,198	297,275	317	381,424	435,011	435,011
Sept.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Oct.....	94,749	88,198	297,275	317	381,424	435,011	435,011
Nov.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Dec.....	94,749	88,198	297,275	317	381,424	435,011	435,011
Jan.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Feb.....	94,749	88,198	297,275	317	381,424	435,011	435,011
Mar.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Apr.....	94,749	88,198	297,275	317	381,424	435,011	435,011
May.....	104,144	64,553	292,697	317	381,424	435,011	435,011
June.....	94,749	88,198	297,275	317	381,424	435,011	435,011
July.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Aug.....	94,749	88,198	297,275	317	381,424	435,011	435,011
Sept.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Oct.....	94,749	88,198	297,275	317	381,424	435,011	435,011
Nov.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Dec.....	94,749	88,198	297,275	317	381,424	435,011	435,011
Jan.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Feb.....	94,749	88,198	297,275	317	381,424	435,011	435,011
Mar.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Apr.....	94,749	88,198	297,275	317	381,424	435,011	435,011
May.....	104,144	64,553	292,697	317	381,424	435,011	435,011
June.....	94,749	88,198	297,275	317	381,424	435,011	435,011
July.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Aug.....	94,749	88,198	297,275	317	381,424	435,011	435,011
Sept.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Oct.....	94,749	88,198	297,275	317	381,424	435,011	435,011
Nov.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Dec.....	94,749	88,198	297,275	317	381,424	435,011	435,011
Jan.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Feb.....	94,749	88,198	297,275	317	381,424	435,011	435,011
Mar.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Apr.....	94,749	88,198	297,275	317	381,424	435,011	435,011
May.....	104,144	64,553	292,697	317	381,424	435,011	435,011
June.....	94,749	88,198	297,275	317	381,424	435,011	435,011
July.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Aug.....	94,749	88,198	297,275	317	381,424	435,011	435,011
Sept.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Oct.....	94,749	88,198	297,275	317	381,424	435,011	435,011
Nov.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Dec.....	94,749	88,198	297,275	317	381,424	435,011	435,011
Jan.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Feb.....	94,749	88,198	297,275	317	381,424	435,011	435,011
Mar.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Apr.....	94,749	88,198	297,275	317	381,424	435,011	435,011
May.....	104,144	64,553	292,697	317	381,424	435,011	435,011
June.....	94,749	88,198	297,275	317	381,424	435,011	435,011
July.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Aug.....	94,749	88,198	297,275	317	381,424	435,011	435,011
Sept.....	104,144	64,553	292,697	317	381,424	435,011	435,011
Oct.....	94,749	88,198	297,275	317	381,424	435,011	435,011
Nov.....	104,144	64,553	292				

Visible Supply of the World on the First of each Month	
MONTH	1910-1911 1911-1912 1912-1913

[illegible]

June	67 50	December	67 35
July	67 50	January	67 00
August	67 75	February	67 00
September	68 00	March	67 00
October	67 75	April	67 00
November	67 50	May	66 75

March-2001 at 10.50, 500 at 10.50, 750 at 10.51, 1000 at 10.50.	Total, 10,500 bags.	Ex. - 20 pts p'd to Ex 1000 Sept. for Dec.	Total for day, 20,500 bags
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CRUISING PRICES OF COFFEE			
MONTH	THIS DAY	LAST YEAR	MARK TIME
January	10.50 to 10.51	4.62 to 6.64	
February	10.50 to 10.51	6.54 to 6.65	
March	10.50 to 10.51	6.45 to 6.66	
April	10.50 to 10.51	6.46 to 6.66	
May	10.50 to 10.51	6.46 to 6.66	
June	10.50 to 10.51	6.46 to 6.66	
July	10.50 to 10.51	6.46 to 6.66	
August	10.50 to 10.51	6.46 to 6.66	
September	10.50 to 10.51	6.46 to 6.66	
October	10.50 to 10.51	6.46 to 6.66	
November	10.50 to 10.51	6.46 to 6.66	
December	10.50 to 10.51	6.46 to 6.66	
Market	upward steady at 1 to 4 points advance.	Closed steady at above quotations.	Transferable futures will be issued at 10.49
Delivery on contract today 20.00 bags.			

BRASIL COFFEE VIA EUROPE			
NO. OF BAGS	HIGHER	LOWER	
2,000	10.51	10.51	
3,500	10.50	10.50	
5,000	10.50	10.50	
7,500	10.50	10.50	
10,000	10.50	10.50	
12,500	10.50	10.50	
15,000	10.50	10.50	
17,500	10.50	10.50	
20,000	10.50	10.50	
22,500	10.50	10.50	
25,000	10.50	10.50	
27,500	10.50	10.50	
30,000	10.50	10.50	
32,500	10.50	10.50	
35,000	10.50	10.50	
37,500	10.50	10.50	
40,000	10.50	10.50	
42,500	10.50	10.50	
45,000	10.50	10.50	
47,500	10.50	10.50	
50,000	10.50	10.50	
52,500	10.50	10.50	
55,000	10.50	10.50	
57,500	10.50	10.50	
60,000	10.50	10.50	
62,500	10.50	10.50	
65,000	10.50	10.50	
67,500	10.50	10.50	
70,000	10.50	10.50	
72,500	10.50	10.50	
75,000	10.50	10.50	
77,500	10.50	10.50	
80,000	10.50	10.50	
82,500	10.50	10.50	
85,000	10.50	10.50	
87,500	10.50	10.50	
90,000	10.50	10.50	
92,500	10.50	10.50	
95,000	10.50	10.50	
97,500	10.50	10.50	
100,000	10.50	10.50	
102,500	10.50	10.50	
105,000	10.50	10.50	
107,500	10.50	10.50	
110,000	10.50	10.50	
112,500	10.50	10.50	
115,000	10.50	10.50	
117,500	10.50	10.50	
120,000	10.50	10.50	
122,500	10.50	10.50	
125,000	10.50	10.50	
127,500	10.50	10.50	
130,000	10.50	10.50	
132,500	10.50	10.50	
135,000	10.50	10.50	
137,500	10.50	10.50	
140,000	10.50	10.50	
142,500	10.50	10.50	
145,000	10.50	10.50	
147,500	10.50	10.50	
150,000	10.50	10.50	
152,500	10.50	10.50	
155,000	10.50	10.50	
157,500	10.50	10.50	
160,000	10.50	10.50	
162,500	10.50	10.50	
165,000	10.50	10.50	
167,500	10.50	10.50	
170,000	10.50	10.50	
172,500	10.50	10.50	
175,000	10.50	10.50	
177,500	10.50	10.50	
180,000	10.50	10.50	
182,500	10.50	10.50	
185,000	10.50	10.50	
187,500	10.50	10.50	
190,000	10.50	10.50	
192,500	10.50	10.50	
195,000	10.50	10.50	
197,500	10.50	10.50	
200,000	10.50	10.50	
202,500	10.50	10.50	
205,000	10.50	10.50	
207,500	10.50	10.50	
210,000	10.50	10.50	
212,500	10.50	10.50	
215,000	10.50	10.50	
217,500	10.50	10.50	
220,000	10.50	10.50	
222,500	10.50	10.50	
225,000	10.50	10.50	
227,500	10.50	10.50	
230,000	10.50	10.50	
232,500	10.50	10.50	
235,000	10.50	10.50	
237,500	10.50	10.50	
240,000	10.50	10.50	
242,500	10.50	10.50	
245,000	10.50	10.50	
247,500	10.50	10.50	
250,000	10.50	10.50	
252,500	10.50	10.50	
255,000	10.50	10.50	
257,500	10.50	10.50	
260,000	10.50	10.50	
262,500	10.50	10.50	
265,000	10.50	10.50	
267,500	10.50	10.50	
270,000	10.50	10.50	
272,500	10.50	10.50	
275,000	10.50	10.50	
277,500	10.50	10.50	
280,000	10.50	10.50	
282,500	10.50	10.50	
285,000	10.50	10.50	
287,500	10.50	10.50	
290,000	10.50	10.50	
292,500	10.50	10.50	
295,000	10.50	10.50	
297,500	10.50	10.50	
300,000	10.50	10.50	
302,500	10.50	10.50	
305,000	10.50	10.50	
307,500	10.50	10.50	
310,000	10.50	10.50	
312,500	10.50	10.50	
315,000	10.50	10.50	
317,500	10.50	10.50	
320,000	10.50	10.50	
322,500	10.50	10.50	
325,000	10.50	10.50	
327,500	10.50	10.50	
330,000	10.50	10.50	
332,500	10.50	10.50	
335,000	10.50	10.50	
337,500	10.50	10.50	
340,000	10.50	10.50	
342,500	10.50	10.50	
345,000	10.50	10.50	
347,500	10.50	10.50	
350,000	10.50	10.50	
352,500	10.50	10.50	
355,000	10.50	10.50	
357,500	10.50	10.50	
360,000	10.50	10.50	
362,500	10.50	10.50	
365,000	10.50	10.50	
367,500	10.50	10.50	
370,000	10.50	10.50	
372,500	10.50	10.50	
375,000	10.50	10.50	
377,500	10.50	10.50	
380,000	10.50	10.50	
382,500	10.50	10.50	
385,000	10.50	10.50	
387,500	10.50	10.50	
390,000	10.50	10.50	
392,500	10.50	10.50	
395,000	10.50	10.50	
397,500	10.50	10.50	
400,000	10.50	10.50	
402,500	10.50	10.50	
405,000	10.50	10.50	
407,500	10.50	10.50	
410,000	10.50	10.50	
412,500	10.50	10.50	
415,000	10.50	10.50	
417,500	10.50	10.50	
420,000	10.50	10.50	
422,500	10.50	10.50	
425,000	10.50	10.50	
427,500	10.50	10.50	
430,000	10.50	10.50	
432,500	10.50	10.50	
435,000	10.50	10.50	
437,500	10.50	10.50	
440,000	10.50	10.50	
442,500	10.50	10.50	
445,000	10.50	10.50	
447,500	10.50	10.50	
450,000	10.50	10.50	
452,500	10.50	10.50	
455,000	10.50	10.50	
457,500	10.50	10.50	
460,000	10.50	10.50	
462,500	10.50	10.50	
465,000	10.50	10.50	
467,500	10.50	10.50	
470,000	10.50	10.50	
472,500	10.50	10.50	
475,000	10.50	10.50	
477,500	10.50	10.50	
480,000	10.50	10.50	
482,500	10.50	10.50	
485,000	10.50	10.50	
487,500	10.50	10.50	
490,000	10.50	10.50	
492,500	10.50	10.50	
495,000	10.50	10.50	
497,500	10.50	10.50	
500,000	10.50	10.50	
502,500	10.50	10.50	
505,000	10.50	10.50	
507,500	10.50	10.50	
510,000	10.50	10.50	
512,500	10.50	10.50	
515,000	10.50	10.50	
517,500	10.50	10.50	
520,000	10.50	10.50	
522,500	10.50	10.50	
525,000	10.50	10.50	
527,500	10.50	10.50	
530,000	10.50	10.50	
532,500	10.50	10.50	
535,000	10.50	10.50	
537,500	10.50	10.50	
540,000	10.50	10.50	
542,500	10.50	10.50	
545,000	10.50	10.50	
547,500	10.50	10.50	
550,000	10.50	10.50	
552,500	10.50	10.50	
555,000	10.50	10.50	
557,500	10.50	10.50	
560,000	10.50	10.50	
562,500	10.50	10.50	
565,000	10.50	10.50	
567,500	10.50	10.50	
570,000	10.50	10.50	
572,500	10.50	10.50	
575,000	10.50	10.50	
577,500	10.50	10.50	
580,000	10.50	10.50	
582,500	10.50	10.50	
585,000	10.50	10.50	
587,500	10.50	10.50	
590,000	10.50	10.50	
592,500	10.50	10.50	
595,000	10.50	10.50	
597,500	10.50	10.50	
600,000	10.50	10.50	
602,500	10.50	10.50	
605,000	10.50	10.50	
607,500	10.50	10.50	
610,000	10.50	10.50	
612,500	10.50	10.50	
615,000	10.50	10.50	
617,500	10.50	10.50	
620,000	10.50	10.50	
622,500	10.50	10.50	
625,000	10.50	10.50	
627,500	10.50	10.50	
630,000	10.50	10.50	
632,500	10.50	10.50	
635,000	10.50	10.50	
637,500	10.50	10.50	
640,000	10.50	10.50	
642,500	10.50	10.50	
645,000	10.50	10.50	
647,500	10.50	10.50	
650,000	10.50	10.50	
652,500	10.50	10.50	
655,000	10.50	10.50	
657,500	10.50	10.50	
660,000	10.50	10.50	
662,500	10.50	10.50	
665,000	10.50	10.50	
667,500	10.50	10.50	
670,000	10.50	10.50	
672,500	10.50	10.50	
675,000	10.50	10.50	
677,500	10.		

total amount of wheat shipped for the week from all countries. . . . Our head office in Liverpool is the center to which all information is mailed, wired and cabled, and they in turn through the different exchanges are able to have the information made public all through the world." Broomhall's "Corn Trade News" is the official paper of this agency, a special edition of which is published in New York. Prices are sent from New York to Liverpool and posted on the exchange board within six minutes, and direct communication from New York to Argentine is accomplished within fifteen minutes.

In addition to the methods just described for collecting and compiling data, many of the larger grain commission and brokerage houses, such as Finley Barrell & Co., Chicago; Logan & Bryan, New York; Bartlett Frazier Company, New York; and S. B. Chapin & Co., New York, make a practice of canvassing the intelligent opinion of men located in the grain belt for the purpose of estimating the conditions of the grain, the acreage, etc. As an example, Finley Barrell & Co. recently mailed to some five thousand individual correspondents postal cards having the following questions concerning the corn crop:

Has corn crop turned out better or poorer than expected?  
Are husking returns larger or smaller than expected?  
What is the present condition of corn?  
Are farmers satisfied with present prices?  
Have they sold new corn freely?  
Will movement to market be free?  
How soon will it commence?

A great number of these correspondents are in daily communication with their firms and are able to inform the latter of any circumstance of sufficient importance to justify a special investigation. In fact, Mr. S. S. Daniels, editor of the market reports of the Philadelphia Commercial Exchange, is authority for the statement that these reports coming in daily over cables, wires and tickers are the greatest general factor influencing prices.

The private crop experts are usually in the employ of, or represent, some large firm or commission merchants. Here as elsewhere it will be found that there are both good and bad. Numbers of so-called crop experts publish misleading crop reports in order to influence the market in the interest of speculators. But there are a

number—one broker puts it at less than one and one-half dozen—of genuine crop experts, men of mature judgment whose business it is to give disinterested and impartial advice on the growing crops and whose opinions can be depended upon to represent the facts as they know them. Foremost among such men in this country are Mr. John M. Inglis, with Logan & Bryan, New York; Mr. B. W. Snow, of Bartlett Frazier Company, New York; Mr. Oscar K. Lyle, of S. B. Chapin & Co., New York; and Mr. George M. Le Count, with Finley Barrell & Co., Chicago. Representatives of any of these firms can usually be found on any important grain exchange.

These different men use different methods. The method of Mr. Le Count, for instance, is that of direct observation, going into and through the grain growing sections of the country and minutely examining the growing crops. Snow's reports, on the other hand, are the result of an organization almost as complicated as and modeled upon the government crop reporting service. Needless to say, these men, while classified together here, perform functions differing the one from the other.

#### *The Coffee Market*

The coffee market, like the grain market, looks to the exchanges for its current information. The production of coffee is localized as is probably no other commodity sold to-day by the exchange method. By far the largest part of the world's supply is grown in the State of Sao Paulo, Brazil. A small portion comes from the East Indies. The exchanges which are instrumental in fixing the prices of coffee are New York, Havre, Bremen and Hamburg. There are some private reports on coffee, but the superintendent of the New York Coffee Exchange is authority for the statement that with one exception they have no influence on the market. That report is the one issued by Messrs. Willet and Gray, of New York.

The great source of information in the United States on the coffee market is the New York Coffee Exchange. It publishes daily, monthly and annual reports; its figures are accepted as accurate throughout the world, and its reports are looked forward to with great interest by the trade. The statistical work of this exchange consists in collecting and compiling daily detailed information as to the prices of coffee on its own floor, at Havre, Hamburg and Rio de Janeiro; stocks on hand with their location; daily and weekly



receipts and deliveries from all important warehouses of the world; coffee afloat, with source of origin and destination; and, lastly, reports on weather and temperature in the regions of coffee production. This information furnishes a complete report of the daily condition of the growing crop, the location and the movement of stocks on hand and the prices ruling on the important exchanges.

These daily reports are further condensed into a *monthly summary* of the figures enumerated above. The most important item of the monthly report is the table of the world's visible supply, and it is looked forward to each month with great interest. The visible supply figures are also compiled by two European organizations, viz: Messrs. Duuring & Zoon, of Rotterdam, and Mr. E. Laneuville, of Havre. The three separate totals show a very small difference.

The "Annual Supplement" of the coffee exchange report summarizes in more condensed form the reports already noted and is of historical value principally. It serves, of course, to afford a quick comparison for a series of years as regards the total yield, the movement of the crop to points of consumption, and the comparative prices.

### *Metal Statistics*

Information dealing with the metal market may be grouped under three heads, viz: (1) Sources of current statistics; (2) trade papers publishing current information; and (3) annual statistical publications. The following are the important ones:

#### 1. SOURCES OF CURRENT STATISTICS

##### A. United States Statistics:

American Iron and Steel Association, 261 S. 4th St., Philadelphia.  
Copper Producers' Association, No. 1, Liberty St., New York.  
Horace J. Stevens, ed. "The Copper Handbook," Houghton, Mich.  
"The Iron Trade Review," Cleveland, O.  
"Engineering and Mining Journal," New York.  
United States Steel Corporation Monthly Report of unfilled orders.  
Custom House returns.

##### B. English and Foreign Statistics:

Julius Matton, 25 Rood Lane, London.  
Henry Merton & Co., Ltd., London.  
Vivian, Younger & Bond, London.

#### 2. TRADE PAPERS PUBLISHING CURRENT INFORMATION

"The Journal of Commerce and Commercial Bulletin," New York.  
"The Iron and Coal Trades Review," London.



- "The Iron Trade Review," Cleveland.
- "The Iron Age," New York.
- "Mineral Industry," New York.
- "Engineering and Mining Journal," New York.
- "American Metal Market" and "Daily Iron and Steel Report."  
Published by the American Metal Market Co., 81 Fulton St., New York.
- "The Steel and Metal Digest" (monthly). Published by the American Metal Market Co., 81 Fulton St., New York.
- "Bulletin of the American Iron and Steel Association," 261 S. 4th St., Philadelphia.

3. ANNUAL STATISTICAL PUBLICATIONS

- "Statistical Report of the American Iron and Steel Association," 261 S. 4th St., Philadelphia.
- "Metal Statistics," published by the American Metal Market Co., 81 Fulton St., New York.
- Publications of the United States Geological Survey.
- "Commerce and Navigation of the United States," published by the Bureau of Statistics, Washington, D. C.
- "The Copper Handbook," published by Horace J. Stevens, Houghton, Mich.
- Comparative Statistics of Lead, Copper, Spelter, Tin, Aluminum, Nickel, Quicksilver and Silver, compiled by the Metalsgesellschaft, the Metallurgische-Gesellschaft A.-G. and the Berg- und Metalbank Aktiengesellschaft, Frankfurt-am-Main, Germany.
- "Directory of Iron and Steel Works in the United States," published by the American Iron and Steel Association.

This classification is made on the basis of nearness to the source whence the statistics originate both in time and place, the intention being to show as nearly as possible in all cases the original source from which the information is compiled, the channels by which it first reaches the general public, and then the annual volumes into which it finally finds its way and is permanently preserved.

The pioneer collecting agency for iron and steel statistics in the United States is the American Iron and Steel Association. Its statistical work relates mainly to the operation of all the iron and steel works of the United States, covering the production of the blast furnaces, rolling mills and steel works. So thoroughly does this organization do its work and in such confidence is it held by the trade that its data are accepted everywhere as authoritative. Its inquiries are sent to each individual manufacturer with requests for his own production. These returns are then summarized by dis-

tricts, states and for the whole country. Much of the success of the association in obtaining data is due to its method of disclosing to no person the results for individual establishments. It publishes only the summaries. It sends out regular blank forms of a most comprehensive nature on which returns are made.

The "Iron Trade Review," of Cleveland, a trade paper, collects from the mines of the Lakes Region their annual output of iron ore. While this is an annual publication, it is the only publication of its kind, and is looked forward to with great interest. It is republished in every important paper which reports on the metal markets.

What is done for iron and steel by the two organizations just noted is done in much the same manner for copper by two other organizations, viz: the Copper Producers' Association, of No. 1 Liberty Street, New York City, and Horace J. Stevens, editor of "The Copper Handbook," Houghton, Michigan. The former is an association created and supported by about a dozen copper producing companies. And since these companies control the entire output, the production of copper is concentrated in a way that makes the gathering of data a simple matter. The Copper Producers' Association has to deal with these few companies only. The reports are published monthly and deal exclusively with copper in marketable condition.

The best available source of statistics of mine production and of general information concerning copper and copper mining companies is that published by Horace J. Stevens in his annual "Copper Handbook." In an extended letter to the writer, Mr. Stevens explains his method of collecting statistics and the importance of this subject justifies a reproduction in substance of his statement. With an annual request which he sends to mine owners he incloses a blank question sheet of a most exhaustive nature. This request goes to the ten thousand and more companies that are described in the "Handbook" and also to several thousand others who are not there included. In addition to these he utilizes other sources of information, as follows: Different governments of the world, through the proper departments, are requested to send official reports and other information not published but on file. All reports of mining companies are kept on file, as are also the prospectii of new companies. The services of a clipping bureau are utilized and

a clipping bureau is maintained in his own office. One of his most valuable sources of information comes from his correspondence with mining engineers throughout the world.

Of first hand material two other sources must still be noted. The United States Steel Corporation now publishes a monthly report of its unfilled orders, and, due to its commanding position in the iron and steel business, this report is taken as indicative of the current condition of that industry. The report is looked forward to with great interest by brokers. The custom house furnishes currently to the trade the figures of imports and exports of metals, which later come out in the monthly and annual summaries. For English and foreign data there are three firms in London whose names are well known. No more than a mere mention of them is necessary here. They are Julius Matton, 25 Rood Lane; Henry R. Merton & Co., Limited, and Vivian, Younger & Bond. Their statistics of production and prices appear in the weekly editions of the "Iron and Coal Trades Review" (London), and they are credited with a large part of the foreign statistics in the principal annual publications.

The second step in the distribution of this enormous mass of information is its publication by the trade papers. A detailed description of the reports of each of these journals is not necessary. The general objection that can be directed at most of them is that they are first technical journals, dealing with the mechanical side of mining and are only secondarily trade journals, publishing market news. The result of this is that their market reports are in many, if not most, cases meager in the extreme. Some of them, as, for instance, the "Iron Trade Review" and the "Engineering and Mining Journal," are important more because of the original material they compile than for their market reports. The "New York Journal of Commerce" is a model among the trade newspapers in this country. Its reports are full, are well classified and are not too much intermingled with "opinions." The "Iron and Coal Trades Review" (London) is also a model trade paper. Its weekly edition has separate divisions devoted to each of the important metal markets, beginning with a concise statement of the condition of the market, followed with a small and concise table of statistics comprising prices, production, etc. A large part of the value of its reports is due to the arrangement of the material in such a way that the substance can be quickly grasped without the necessity of disen-

tangling it from a mass of unimportant data. The pioneer effort in the way of a daily paper devoted exclusively to the metal markets belongs to the American Metal Market Company. Its daily publication, "The American Metal Market and Daily Iron and Steel Report," to-day publishes the best reports on production, prices and news of the metal trades, and it bids fair to become the sort of paper that is needed. The monthly publication of the same organization, "The Steel and Metal Digest," presents the same data in a somewhat less detailed and more summarized form monthly. The American Iron and Steel Association issues a monthly bulletin dealing with the statistics it has compiled. Practically all the daily newspapers in the large cities publish daily reports on the metal markets. Most of these leave much to be desired. They give only a fleeting impression of the market and are hardly trustworthy for one whose interest demands definite and detailed facts.

The work of the annual publications consists in collecting the information already enumerated and putting it in permanent form. Foremost among these is the "Annual Statistical Report of the American Iron and Steel Association," which embodies the yearly results of the work of the association. The "Directory of Iron and Steel Works," published, or revised, every three or four years by the same organization, is the only publication of its kind in the United States and is an invaluable work. "Metal Statistics," published by the American Metal Market Company, is a comparatively recent publication, the fourth edition appearing in 1911. It is somewhat smaller and more condensed than the one first enumerated and presents in a concise handy pocket volume the important data. Its statistics are taken from the compilation of the Iron and Steel Association. The "Copper Handbook," edited and published by Horace J. Stevens, is the best and practically the only volume dealing exhaustively with copper. The United States Government furnishes annual figures which cannot be obtained elsewhere. In the annual reports of the United States Geological Survey are to be found figures of the production and consumption of metals in the United States, and the annual volume on "Commerce and Navigation of the United States," published by the Bureau of Statistics, furnishes figures of imports and exports of metals. Last to be noted is the most exhaustive publication of all dealing with metals, viz: "Comparative Statistics of Lead, Copper, Spelter, Tin, Aluminum, Nickel,

Quicksilver and Silver," published at Frankfurt-am-Main, Germany. This is a compilation by the Metalls-gesellschaft, the Metallurgische-Gesellschaft A.-G. and the Berg and Metalbank Aktiengesellschaft, the sources of its statistics being in many instances the organizations already noted, but they are collected here in an exhaustive way nowhere else to be found. The possession of this compilation is indispensable to one who has large interests in the metal markets.

## GOVERNMENTAL REGULATION OF SPECULATION

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### *Public Opinion and Speculation*

There are few important economic questions about which there is more confusion of ideas than there is concerning speculation. The attitude of the general public, as expressed through the press, and in the resolutions and laws of the legislatures and of congress, and the interpretation of these laws by the courts, shows a widespread lack of information concerning the buying and selling of produce and securities upon organized exchanges. This confusion seems to consist largely in two misunderstandings, viz., first, that speculation in itself is the cause of the rise or fall in prices, and, second, that speculation is identical with gambling, *i. e.*, that it serves no useful purpose, but exists only as an outlet for certain trouble-making tendencies in human nature.

It is quite natural that there should be this lack of familiarity on the part of the public with our modern mechanism for distributing commodities. This mechanism is the product of one of the most rapid series of changes in industrial organization that the world has ever known. When we recall that the first railroad was opened for traffic in England in 1825, that in 1850 there were only 9,021 miles of railroads in the United States, that the first steamship crossed the Atlantic only in 1838, that the commercial telegraph was invented in 1837, and the first successful Atlantic cable laid in 1866; when we recall these facts, we realize only in part the tremendous change which has come over the economic world within practically the last fifty years. While within this period the country's population has grown from 31,443,321 in 1860 to 91,972,267 in 1910, the production and consumption of goods have increased at a far more rapid pace, as is shown by the following comparison:



	1860	1910
Cotton .....	3,841,416 bales	10,650,961 bales
Wheat .....	173,104,924 bushels	695,413,000 bushels
Corn .....	838,792,780 bushels	3,121,381,000 bushels
Pig iron .....	821,223 long tons	27,000,000 tons*
Coal .....	13,044,680 long tons	407,000,000 tons*
Petroleum .....	21,000,000 gallons	5,388,000,000 gallons†
Gold .....	6,486,262 ounces	23,000,000 ounces
Copper .....	14,400,000 pounds‡	1,500,000,000 pounds‡
Crude steel .....	19,643 tons§	23,755,021 tons
Product of national manufactures .....	\$1,885,861,676	\$14,802,147,087
Product of farms .....	\$1,958,030,927¶	\$8,926,000,000

\*Approximate. †1908. ‡Estimated.  
 §First Bessemer steel manufactured in the United States.  
 ¶1909. ||1870.

Vastly more important, however, for our purposes is the equally great change that has come about partly as a result of these other changes in the organization of business itself during this same period. The most striking features of this development are:

1. The growth of large-scale production with its accompanying by-product economies.
2. The enormous conversion, largely since 1880, of partnership and one-man businesses into corporations, with the corresponding increase of stocks and bonds.
3. The combination of concerns in the same or allied lines into huge holding corporations with hundreds of millions of capital.
4. The rise of great, organized public markets throughout the country for the buying and selling of stocks and produce.

These features of our industrial growth are well known, but their close relationship and interdependence are not always borne in mind. In the year 1863, for example, the highest price of a seat on the New York Stock Exchange was \$4,500; in 1910 it was \$91,000. From a small business in the national debt and railroad securities in 1860 the business of the exchange has risen to sales of 212,563,644 shares of stock and bonds to the value (at par) of \$1,311,874,700 for the year 1909, which is a representative year. During this same year the par value of new stocks listed was

\$1,154,990,370 and of bonds \$1,009,518,600. A similar growth is characteristic of the grain and cotton exchanges. The Chicago Board of Trade was incorporated in 1859 and the cotton exchanges in the early seventies. To-day sales on the New York Cotton Exchange amount to about fifty million bales per year; while the sales of wheat on the Chicago Board of Trade each year exceed the nation's crop in this cereal by several times.

Until comparatively recent times little recognition was given to the claims of remuneration for risk-taking. Cunningham,<sup>1</sup> in his "English Industry and Commerce," says: "English merchants were not to forestall wine in Gascony, or buy it up before the vintage, and the time of the common passages; nor were they to charge high for the wine on the pretense that they ran risks. Cost of carriage was a charge that could be checked, and this might doubtless be allowed for when sale was made in London; but remuneration for risk was obviously regarded as a mere excuse for arbitrary demands on the part of the merchant, and these were not to be permitted at all."

To-day we recognize that risks must be taken if industry is to be carried on, and that all necessary risks must be eventually borne by the consumer in the higher price of the goods thus produced. The world is willing to pay for the necessary risks assumed in the growing and marketing of its crops, but it demands that this risk be made as small as possible. Yet how is the world to determine each year what a reasonable price for its wheat is—a price fair to the farmer who grows the grain and fair to the millions who consume it? The problem has been solved by the growth of the speculating class, men who make it their profession to study the conditions of the supply of and demand for wheat throughout the entire world, and buy and sell accordingly until the price approximates a point which gives the farmer a fair remuneration for his labor and judgment, thus insuring a continuance of the supply, and at the same time keeps down the price to the consumer as near as possible to that secured by the farmer. I say as near as possible because in no other field is competition more sharp and vigorous than on the organized markets where produce is bought and sold.

From the individual point of view, the speculator is one who

<sup>1</sup>Vol. I, p. 294, quoted from Emery, "Speculation in the United States.

seeks to forecast changes in value, and buys and sells accordingly in order to secure as a profit the difference between the two prices. From the point of view of the trade, the speculator is that member of it who assumes the risk of changes in value of the given product as it passes from producer to consumer. His services are in the nature of an insurance to the other member of the trade. As a member of the body politic, the speculator may be regarded as embodying the keenest foresight of the community. He is the commercial scout who first discovers and reports changes in values, and thus is indispensably instrumental in the direction of the world's industry into the most efficient channels.

There are two main lines along which agitation against organized speculation has proceeded. The one is economic. It is a protest, on the one hand, from producers or sellers that speculation lowers prices, and is directed mainly against "bear" activities; and, on the other hand, from consumers or buyers that speculation raises prices, and is directed mainly against the "bulls." The moral program, however, which we will consider first, cares not for bulls or bears, or for the specific effect of speculation upon prices. It often denies, in fact, that speculation has any effect upon prices, except, to use its own expression, "to demoralize" them. It identifies speculation with gambling, and condemns both alike. Its supporters see and read about the lives ruined by unfortunate speculation on the exchanges, the defalcations of trusted bankers and employees to make good losses incurred in the market, and the hundreds of tales of woe that rise always from such centers of trade; and, as is quite natural for unreflecting individuals, especially when given the cue by an unreflecting press, they come to the conclusion that the organized market, with its facilities for all to buy and sell, is more of an evil than a good, that the whole process is gambling, according to the most radical, and should be crushed out. In Germany, this idea of crushing out the evil was put into practice with results that will be described later.

In the growing and distributing of produce the community must take the risks of fluctuations in value. How shall this risk best be taken? Who is best fitted to measure and meet it? The farmer cannot take it. He, as an individual, raises but a ten thousandth part of the crop. The consumer or the baker who buys a fractional part of the flour manufactured cannot assume it

with any success. The price of wheat, for instance, which fluctuates is a world price. The big wholesaler formerly took much of the risk of changes in the value of wheat occurring between the moment it ripened in the field and the moment it went to the miller to be turned into flour, and he still takes a large part of it. But the final evolution of the problem of risk in this field of production is the development of a trained group of speculators who give their time, ability and capital to the determination of values. They have come to express, where there is a *bona fide* market, the best judgments of the world on the value of the commodities in which they deal. The bulls take care of the interest of the farmer. They watch every opportunity to push up the price. Every failure of the crop in a local district, every bad period of weather which seems likely to bring about or increase that failure is used by the bulls as a basis for paying or offering to pay a higher price for the crop in question. On the other hand, the bears represent the consumer who is on the watch to buy at the lowest possible price. They are the agents of the bread-eating public to see that every factor tending to lower the price has an adequate effect in lowering the price, as far and as soon as possible. For this service of acting as a medium through which the forces of supply and demand act with the least friction, the speculator receives his speculative profits. These may at times be large, but they are no larger than profits gained in any pursuit. Exceptional ability invariably commands exceptional returns.

Most people have yet to learn that they cannot speculate successfully because they are allowed, and are able, to buy and sell produce on a ten per cent margin. When we reflect that something over ninety per cent of all people who go into business for themselves fail, we should not be surprised that of the thousands of "outside lambs" who attempt to assume the risks of one of the most uncertain occupations in the business world, and one about which they know little or nothing, the great majority should fail, and fail in a very short time to an extent not even always limited to their capital. The real problem in this connection is not to destroy organized speculation and go back to the uneconomical methods of the past, but to give individuals who have a special aptitude for speculation the best training we can for that difficult occupation, and let them do the speculating just as certain specially trained

classes take care of our bodies, our souls, and our legal rights. But, as in these three latter cases, a well-informed and aggressive public is indispensable to the development of the greatest merit, so in speculation, public education on the subject is the best guarantee that the organized market will be put exclusively to the use for which it was established.

As to the objections to speculation that it raises prices, or lowers prices according to the point of view, it is only necessary to point out that speculation has always existed where uncertainty exists, that it is the effect of conditions and not the cause of them, that its object and reason for being is to foresee and anticipate price changes by buying and selling and not to create them. As by speculation, however, its critics usually mean the trading in "futures," I may quote from a report (1901) of the United States Industrial Commission on the "Distribution of Farm Products," in which this feature was specifically discussed.

On page 213 of this report, after several pages of tables and charts containing spot (cash) and future prices, the following summary is given: "Out of fifty-seven different futures compared with the spot (cash) prices realized in the New York cotton market from 1881-82 to 1899, in twenty-nine cases the futures proved to be higher than the spots realized three months hence, and in twenty-eight cases the futures were lower than the spots at maturity—that is, the speculative judgment anticipated the realized value of cotton a little too favorably in half the cases and not quite favorably enough in the other half.

"In the Liverpool market, out of fifty-seven cases (1881-82 to 1899) of comparison of future bids with spot prices realized at the expiration of the contract period, it appears that in thirty cases the future prices were lower than the spot prices realized at maturity of contract, and in twenty-seven cases the future prices were higher than the spot prices realized at maturity. In the New Orleans market, out of fifty-seven cases, in twenty-five of them the future price was lower than the spot price realized three months later, and in twenty-six cases the future price was higher than the spot price.

"These results would seem to support the conclusion that, in the long run, the speculative quotations for future delivery are neither uniformly above nor below the level of the proper cash



value of cotton as determined at the future date, but that they are tentative anticipations of such realizable value as the conditions of the supply and demand are most likely to determine at the time when the future contract matures." . . .

Again, on page 233, the report continues: "As we have attempted to show, it is a mistake to represent speculation in futures as an organized attempt to depress prices to the producers.

"First. Because every short seller must become a buyer before he carries out his contract.

"Second. Because, so far as spot prices are concerned, the short seller appears as a buyer and not a seller, and, therefore, against his own will is instrumental in raising prices.

"Third. Because, as far as 'future' prices are concerned, the 'bull' in speculative buying counteracts the effects of speculative selling by the 'bear.'

"Fourth. Because the 'bull' in his realizing operations when depressing prices are counteracted by the opposite effect of the 'covering' movements of the 'bear,' the two sides thus keeping the market price about where it would be kept in the long run if instead of 'bulls' and 'bears' there would be ordinary legitimate buyers and sellers.

"Fifth. Because, as has been shown, future sales are not made at a uniformly lower price than the corresponding spot price, but, on the contrary, are on the average a little above spot prices to meet the cost of storage, interest and other charges.

"Sixth. Because, as has been shown, neither the 'bulls' nor the 'bears' are uniformly on the winning side, but are about equally winners and losers, thus proving that one is about as important and influential a factor in the market as the other.

"Seventh. Because evidence, believed to be conclusive, has been presented showing that, under speculation, prices prevailing at the time when producers dispose of the greater part of their products are greater in comparison to the rest of the year than they were before the advent of speculation."

This last point refers to a comparative study of prices before and after speculation began, on both the wheat and cotton exchanges. The figures show that month to month fluctuations have steadily diminished in extent but increased in frequency from the earliest date, 1840; and, as pointed out above, the natural tendency



to falling prices, when the new crop comes on the market, has not only been counteracted by the development of speculation, but has been turned into an opposite movement, making the April and May price differ from the fall price only by the cost of storage, interest, etc., and sometimes even by not so much as these. The results of a study of the figures from the Berlin wheat market for forty years show substantially the same relation between futures and spots as in the case of Liverpool and the American exchanges.

The misconception of the function of "futures" is due to a lack of a broad grasp of the trade situation. We have, on the one hand, in the case of both cotton and grain, a multitude of unorganized producers, many, if not most, of whom must sell their crop which may be large or small (fluctuations run into the millions) as soon as produced. On the other hand are the millers or cotton manufacturers of all degrees of wealth and policy, who must have the raw material for their mills. How can these two parties, buyers and sellers being in all parts of the globe, be best brought together? How is the price of the grain or cotton to be best fixed for the world, if not by the representatives of the two interests meeting at some common place with good transportation and telegraphic facilities, and bargaining for their respective clients.

Market conditions affecting the value of the two crops are changing every day. What cause for wonder is it that the same bale of cotton or the same bushel of wheat should be sold over and over again in a given season, or that a special class of traders should have gradually developed giving all their time to the determination of these conditions and their effect on the prices of the two articles? When farmers must be paid at once and millers and manufacturers buy only from month to month, some arrangement must be made to accommodate the two. When millers and manufacturers contract far ahead for the delivery of flour or cloth, they must know something about the price which they must pay for their raw material, which perhaps they will not need nor be able to purchase for cash for several months. When the farmer plants cotton or wheat he ought to know something about the price he is to receive for his crop. When his market is the haphazard buying of the manufacturers and millers, what guarantee has he either of its steadiness or a fair price? This was the condition before the war when prices notoriously fluctuated and the big dealer had the

local farmer at a greater disadvantage than usual, with no central market publishing daily reports of the world prices. Now, the organized market stands ready at any moment to take over the farmer's crop and pay him for it the cash price. Whether he chooses to throw his entire crop on the market as soon as produced or to store and insure it himself, the price is maintained, and is ready for him every day of the year.

The arrangement by which all these results are obtained is the "future," that is, the right to contract for months ahead on a small cash payment to deliver or pay for so many bales of cotton or bushels of wheat. The "future" contract in every department of business has made possible the disappearance of the old hand-to-mouth economy and enabled business men to live like rational beings with their work well planned many months or years in advance. Organized speculation not only transfers the burden of risk from one pair of shoulders to another better fitted to take it, but it cuts down the risk of over- or under-production for the community, of any one commodity. Too often the occasional wild flurries, the sensational corners, the streaks of good or bad fortune of some individual are heralded as indications of the nature of the exchange, while its steady everyday services to commerce and industry are passed by unnoticed.

Let me call attention to some of the main items from a recognized authority that can be placed to the credit of speculation. From the final report of the Industrial Commission, 1902, page 186, "The three great functions which speculation performs in a free system of trading are:

"First. To localize the risks of distribution among a special class of experts presumably well informed as to the facts of supply, demand, credit, exchange and the cost of distribution.

"Second. To relieve producers and consumers alike of the expense and risk of being responsible for a year's production, thus freeing the cash income of both of these economic interests for other uses than those of protecting and providing a long-term supply of utilities.

"Third. To reduce the profits of trade by ready and active competition among the various speculative interests toward a minimum of cash per unit of the commodity handled, by conducting distributive operations on a large scale.

"Throughout the East and West it appears to be the general practice of millers on a large scale, who make contracts for delivering flour in the future, to purchase in the market for 'futures' a corresponding quantity of wheat against the contract for the delivery of flour which they have assumed. This system, as stated by entirely trustworthy representatives of the trade, has been found to be absolutely necessary in order to prevent the miller from assuming the extraordinary risks of changes in the market value of wheat. Only the more speculative and daring millers would undertake to fulfil future contracts without exercising this precaution of purchasing wheat 'futures.' In considering the question of whether buying and selling of 'futures' is consistent with the welfare of the producer, this aspect of the practice must be regarded as buying and selling insurance against loss.

"The economic position of warehousemen in handling agricultural products under the present system is somewhat similar to that of the miller. The warehouseman with a million of bushels of grain in storage is obliged in some way to secure himself against loss from a fall in cash prices in the future, by selling 'futures' at a price which will cover his outlay. This absolutely eliminates that million bushels of grain from the class of risks which the business has to run."

### *Speculation and the Law*

In England, as in this country, there have been relatively few attempts to regulate or restrict organized speculation as carried on to-day. In France the Bourse of Paris is a semi-public institution, and the consent of the Minister of Finance must be obtained to the appointment of new brokers and to certain other actions; but, in the main, French exchanges, as regards their internal arrangements, are left very largely to themselves.

Until 1896 there was almost a complete lack of statutory regulation of exchanges in Germany. In that year, however, legislation was enacted of so radical and repressive a nature that it may be well to call attention to its provisions and their effects before reviewing the American federal and state activity in this direction.

The impetus to this legislation<sup>2</sup> came from the failure of certain large banks of Berlin in 1891 in connection with the misuse of their deposits and with evidence exposing an undue amount of speculation on the part of the public. In 1892 a commission was appointed by the imperial government, with Dr. Koch, president of the Reichsbank directorate, as chairman, with a majority of the membership being lawyers and a representation of landed proprietors, merchants and economists, to consider the whole question of the Bourse.

Without going into the details of its investigations and report, which latter was made November 11, 1893, recommending certain statutory and administrative changes, it is fair to say that its work was well and impartially done, and its attitude and recommendations both judicious and prudent. The imperial government, however, especially the Reichstag, being influenced by the agrarians, or rural landholding party, proceeded to make regulations much more stringent than those recommended by the commission.

The "exchange act," as it was called, became law June 22, 1896, and went into effect January 1, 1897. It contains provisions under five main headings: (1) General organization; (2) quotations of prices and duties of brokers; (3) the listing of securities; (4) transactions for future delivery; and (5) dealing on commission. It is with the fourth heading that we are chiefly concerned in this article, viz., that prohibiting all "exchange dealings for future delivery" in grain and flour, and also all "exchange delivery for the account" (to be settled on "account" day a month hence) in the shares of mining and industrial companies. The next important provision was the establishment of an "Exchange Register," in which was to be entered the name of every person engaging in future transactions. Contracts made by two persons entered in the register were declared binding and exempt from the defense of wages. Where either party was an unregistered person, the contract was void, and either party might evade payment if his operations were ill-judged by putting forward the defense of wager.

As pointed out by Emery, there were three real and supposed evils which these provisions sought to prevent, viz., (1) the manipu-

<sup>2</sup>The following account has been taken largely from Emery in "The Political Science Quarterly," 1898, and "Yale Review," 1908-09, and Ernst Loeb in "Quarterly Journal of Economics," 1897.

lation of prices by short sellers, cornerers and others, especially against the interests of the producers, (2) the fraudulent or "tricky" manipulation of prices of stocks by "insiders," (3) the demoralizing and disastrous participation of the outside public in speculative transactions.

The last provision was expected to keep members of the public out of the market, in continental countries stocks and produce are dealt in on the same exchange, because, it was thought, they would not dare to announce themselves publicly as speculators by registering; and not being registered, and thus able to make a void "future" contract, would not be trusted as customers by the bankers and brokers who engaged in the selling of stocks.

The two former provisions were intended to prevent "future" trading in grain, which, according to the agrarians, lowered wheat prices, by overfilling the market with "wind" wheat, and to remove the opportunity from headstrong and ignorant individuals of injuring their morals and their fortune by buying or selling shares in mining or industrial companies for the account.

It now remains to examine the working of these German laws. The regulation as to registration proved a lamentable failure, and in 1908 was repealed. Despite the efforts of the leading banks to require registration by refusing to deal with unregistered persons except in purely cash transactions, not only the general public, but even the smaller brokers and provincial banks, declined to put down their names in what they called the "gambling register." The number of registrations never reached four hundred, of which not so many as forty were "outsiders."

Where the cash transactions did increase, it was found that they were no less speculative than time dealings, and being deprived of the regulative action of the short seller the market became one-sided. Bull movements went higher than formerly; the crash was more disastrous, and fluctuations increased in violence. But the unregistered public did not turn wholly to cash dealing because of the ruling of the big banks. They found plenty of smaller concerns, and later the banks themselves, who were forced by failing trade to revoke their rule, willing to deal for them on the strength of personal honesty alone and to make contracts unenforceable by law. This opened a new field to professional crooks who, when they could induce a broker to trust them, defaulted on their losing



ventures, recovering their margins as well as the loss from the broker. Not alone the small jackal of the market, but well-to-do merchants and sometimes bankers appeared as defendants in these suits. Cases occurred where a man would buy and sell the same stock at once through two different brokers and refuse to settle on the losing contract. Opportunities for speculation were not at all removed. In fact, an added "tang" was given it to the adventurous who enjoyed the excitement of the increased uncertainty, while careful men easily could and did transfer their business to foreign markets, especially to London, Budapest, Paris and Amsterdam. Foreign agencies multiplied in Berlin and tax receipts on stock transfers fell from 20,000,000 marks in 1895-6 to 13,000,000 marks in 1902-3. Telegrams received at the offices of the exchanges fell eighteen per cent from 1893 to 1902, and in other offices increased forty-three per cent, showing the shifting of speculation from the organized exchange to the hands of the individual house, and not a decrease of such transactions.

As for the prohibition of account trading in industrial and mining stocks, it is not necessary to go further than the statements of the German government itself to make an explanation of the reasons for repeal provisions attached to the amendatory bills of 1904, 1906, and 1907. The report of 1907 says, in referring to the above, it "has proved injurious to the public, without accomplishing its original purpose." Whatever evils of speculation there were, it declares, have been increased by forcing a resort to new methods, especially cash dealings, and by the narrowness of the market resulting therefrom. Quoting from Dr. Emery further, in his admirable article, "Ten Years' Regulation of the Stock Exchange in Germany," in the "Yale Review," 1908-09, the results of the law may be summarized as follows:

"Fluctuations in prices have been increased rather than diminished. The corrective influence of the bear side of the market has been restricted, the tendency to an inflated bull movement was increased in times of prosperity. This in turn made the danger of radical collapse all the greater in proportion as the bull movement was abnormal. The greater funds needed to carry stocks on a cash basis further increased the danger when collapse was threatened. The result was an increased incentive to reckless speculation and manipulation." Says the German Government report of 1907:



"The dangers of speculation have increased, the power of the market to resist one-sided movements has weakened, and the possibilities of misusing inside information have enlarged."

The last provision we shall consider is the prohibition of "futures" on the produce department of the Bourse. The first result of the attempt to enforce this, along with the appointment of a board representing the agriculturists to assist in the management of the exchange, was the secession of all the produce brokers from the exchange building, leaving the government appointees no brokers to preside over and the representatives of agriculture no colleagues. The seceding members moved across the street and took up new quarters. Here they carried on their trading for future delivery, but without the acknowledged organization of the exchange, the machinery for clearing, the official announcement of prices, and with their printed contract forms containing the express announcement that the established usages of the grain trade were not there in force. All business was done under the general commercial law governing delivery on contracts. While grain was thus bought and sold for future delivery, and while short selling continued as before, still there was much hesitation and uncertainty.

Then the agrarians, in the newspapers and on the floor of the Reichstag, grew bitter in denouncing the government's unwillingness to enforce the law, claiming that this organization constituted an exchange within the meaning of the act, and that illegal trading was still being carried on. Some months after this the government notified the brokers that it considered their organization an exchange and forced them to leave their new quarters. They next took refuge in a hospital, in the various adjoining rooms of which each broker claimed to have an individual office and to be doing a strictly office business under the commercial law. They had no formal fixed rules as to "contract grade," "option of delivery," etc., published no price-list and had no clearing house. However, a private agency soon arose, offering to clear settlements for those who chose to patronize it, which amounted to a practical re-establishment of the clearing house.

Although speculation in "futures" had not been thus entirely stopped, it had been so hampered and harassed as to begin to show the effect of its cessation upon the grain trade. With the disappearance of the central barometer of conditions, the Berlin price-list,

disorganization began over the whole country. As the central price-list faded away, the local markets increased in importance. But as these were hampered by the same law, were authoritative only for the surrounding country, and varied widely as to rules for dealing, contract grades and prices, they were of little help in aiding the farmer or the miller to determine what a fair price for his grain was. The agrarians themselves began to see that the Berlin Bourse had performed a certain service, and endeavored to procure a substitute for the former central price reports. It was even advocated that the government establish a board to collect all the local prices and, on the basis of these, fix a price arbitrarily. This was not carried out, but a board was established to collect and publish three sets of prices, local "spot" prices, Berlin, Danzig and Stettin, and a few other large market prices, and prices on foreign exchanges, which latter are exactly of the speculative sort that were abolished in Berlin. The inadequacy of these prices is easily seen. The two former are local prices under local conditions. They are figures of sales that have taken place and not of prices at which future sales may be made. The foreign prices are of little use to the German producer, who does not normally export grain, but have become increasingly important to the miller for hedging operations, for instance, which are now made on the Amsterdam and Hungarian exchanges, and even, it is said, in Chicago.

Under these conditions of uncertainty, caused by the lack of an authoritative central market quotation list, based on prices at which sales are continuously taking place, it is quite probable that the buyers, feeling the need of greater caution, were less liberal than otherwise in making offers to the producers, and the latter less able to inform themselves as to whether they are being fairly treated by the big dealer than when they could refer to the Berlin prices. It is impossible to say yet what has been the influence of the suppression of short selling upon prices. It must be borne in mind that by undergoing a little more expense, dealers can still and do take advantage of the foreign speculative market for their hedging operations. Furthermore, this experiment came during the recent period of rising prices throughout the world, a rise which cannot be attributed to German legislation. It was averred by the Liberals that German prices for lack of the former speculative demand have

lagged far behind prices in foreign markets, to which the agrarians replied that German prices are normally lower than foreign prices, and that the difference is less now than under the old system.

The agrarians, however, were not at all satisfied. On the one hand, they complained that a more reliable determination of prices has not been introduced, and demanded a compulsory declaration to some authorized body of every sale of grain, stating in each case the quality, conditions of transfer, and the price. On the other hand, they asked for the suppression of such speculation as still continued.

Several conferences between representatives of the two parties were held, and finally, in 1900, the produce brokers returned to the exchange, still forced, however, to keep to the cruder devices in order to avoid the law, and in a state of legal uncertainty as regards their contracts. In the law of 1908, repealing the provision against "futures" in the stock market, the agrarians were still influential enough to make the prohibition of grain "futures" still more restrictive, a measure which caused the traders to threaten to close the exchange altogether. They were assured, however, by the authorities that "hedging" operations would be permitted.

#### *Federal Regulation in the United States*

Many of the states have laws, which will be discussed later, prohibiting in one form or another what the authors thought to be the evils of speculation, but the ineffectiveness of these laws has led to determined attempts to secure federal legislation on the subject.<sup>3</sup> In 1890 a bill, the first of the "anti-option" bills, was introduced by Mr. Butterworth, of Ohio, but never came to a vote. Its most important features were included in bills introduced in the next congress in 1892 by Messrs. Hatch, of Missouri; Alexander, of North Carolina, and Brosius, of Pennsylvania. These bills were referred to the committee on agriculture, which reported back a new bill, known subsequently as the Hatch bill, on which the discussion in both house and senate centered.

The first section defined "options" as privileges or "puts" and "calls," while the second section defined "futures" as contracts for future delivery where the seller was not at the time in possession of the property contracted to be sold, and had not acquired a right

<sup>3</sup>Emery, "Speculation in the United States."

to the same. Contracts made with federal, state or municipal governments were exempted, also contracts made by farmers or planters to deliver grown or growing crops at a future date. Prohibitory transfer taxes and heavy license fees were laid upon dealings and dealers in the commodities to which the bill referred, and each dealer was required to give bond to the amount of \$40,000. The commodities enumerated were raw or unmanufactured cotton, hops, wheat, corn, oats, rye, barley, grass seeds, flaxseed, pork, lard, bacon and other edible products of swine. The bill was designed to kill exchange speculation by repressing short selling.

The bill was fully debated in the house and passed that body by a vote of 167 to 46. In the senate it was also warmly debated and passed with amendments, one including flour in the list of articles mentioned above, 40 to 29, and was then returned to the house for concurrence. On the motion of Mr. Hatch to suspend the rules and take up the bill at once, the vote was 172 to 124, less than the two-thirds necessary. Congress expired before the bill could be reached in its turn.

In the next congress a similar bill was introduced by Mr. Hatch. It went to the committee on agriculture, was referred back with some changes, defining a "future," for instance, as a contract for delivery of the products specified at some future time, and imposing stamp taxes on speculative contracts, which were required to be in writing and in duplicate. The bill passed the house June 22, 1894, by a vote of 150 to 89, not voting 114. It was sent to the senate, referred to the committee on agriculture, reported back, but never came to a vote.

When Mr. Hatch, of Mississippi, and Mr. George, of Missouri, left congress there was a temporary lull in the introduction of "future" and "option" bills. The near-panic of 1903, with accompanying speculative turmoils, aroused, however, a new host of "antis."

In the third session of the fifty-eighth congress a bill was introduced in the house by Mr. Jack Beall, of Texas, to "encourage and promote commerce among the states and with foreign nations, and to remove obstructions thereto." Another was introduced in the senate by Mr. Berry, of Arkansas, "to define 'options' and 'futures,' to make such contracts illegal, and to provide penalties for violation of the law."

The first bill was referred to the committee on interstate and foreign commerce, and the second to the committee on judiciary, but neither was reported back.

In the first session of the fifty-ninth congress Mr. Clay, of Georgia, introduced a bill similarly entitled as Senator Berry's, and Mr. Beall, along with Mr. Smith, also from Texas, introduced each a bill similar to that of Mr. Beall's previous bill. These three bills met a fate similar to that of their predecessors. In the second session, Senator Culberson, also of Texas, introduced a bill "to prohibit interference with commerce among the states and territories and with foreign nations, and to remove obstructions thereto." This bill died in the committee on agriculture and forestry. In the house, Mr. Macon, of Arkansas, introduced a bill "to prohibit interstate buying or selling or otherwise dealing in what are known as futures," and Mr. Burleson, of Texas, again introduced a bill similar to Mr. Berry's mentioned above. Neither of these bills was reported from committee; but Mr. Burleson, on pretense of offering an amendment to an appropriation bill, managed to address the house with a violent attack on the New York Cotton Exchange, and asserted that, despite the failure of the anti-gambling crusade of 1894, that he and a small group of associates were determined to press the matter as long as they remained in congress.

It remained for the sixtieth congress, after the panic of 1907, to break the record in the introduction of bills condemning and prohibiting "futures" and "margins," which latter term some congressman had discovered, and "options." Senator Jeff Davis even wished to prevent anyone from "gaining or losing sums of money called margins from the fluctuations in value of the products of the soil," which recalls to mind the motion offered once by a western congressman to repeal the law of supply and demand. In all there were twenty bills introduced by members from Texas, Arkansas, Oklahoma, Georgia, Alabama, Missouri, Kansas, Mississippi, Iowa and Tennessee. To go into the provisions of each would be unnecessary, as they are much alike; and none of these bills was debated or voted upon.

In the sixty-first congress thirteen bills were introduced by southern or western congressmen. A bill was reported back from the house committee concerning cotton "futures" with amendments striking out several sections, but was not debated and never came



to a vote. In the first session of the sixty-second, the present congress, which began April 4, 1911, eight bills were introduced by Messrs. Burleson, Beall, Rucker, Ferris, Robinson (of Arkansas), Macon and Oldfield, none of which came to a vote. It is probable that the question will continue to come up for some time, until the western and southern states, from which the protests chiefly come, reach a higher level of commercial experience and economic education. Most of the bills mentioned above prohibit "short selling," dealings in "futures," on "margins" and "options" in the grain and cotton markets, though some bills refer exclusively to one and some to the other. They are modeled largely on the plan of bills which have been already introduced or become laws in their respective state legislatures, to which legislation we shall now turn.

Before leaving the field of federal activity, it may be well to call attention to the recent report of the Bureau of Corporations upon the Cotton Exchanges made in pursuance of the following request of the House of Representatives, February 4, 1907: "*Resolved*, That the Secretary of Commerce and Labor, through the Bureau of Corporations, be, and hereby is, requested to investigate the causes of the fluctuations in the price of cotton and the difference in the market price of the various classes of cotton, and said investigation shall be conducted with the particular object of ascertaining whether or not said fluctuations in the prices have resulted in whole or in part from the character of contracts and deliveries thereon made on the cotton exchanges, dealing in futures, or is the result of any combination or conspiracy which interferes or hinders commerce among the several states and territories or with foreign countries."

The report was presented by Mr. Herbert Knox Smith, Commissioner of Corporations in 1908-09, and presents substantially the following conclusions:

1. The future system when properly conducted is of permanent benefit to the cotton industry in general, of particular benefit for the "hedging" operations of cotton merchants and the spinners, and productive of a higher price to the producer or a lower one to the consumer, or both. Its mode of operation is, contrary to the common form of insurance, to concentrate the risks of changes in value upon a special class, the speculators, rather than to distribute them among a large body of policyholders.



2. That, owing to the policy of the New York Cotton Exchange in maintaining a "fixed difference" system of prices based on the price of "middling" rather than a "commercial difference" system, hedging operations are not facilitated, producers sometimes do not thereby obtain the proper market price for their product, and the future system is abused by a small group of cotton dealers for their own narrow purposes.

*State Legislation Affecting Speculative Markets*

New York.—To begin with the states in which the most important markets are situated, and where the community has had most experience with the workings of organized speculation, New York enacted a law in 1812, declaring all contracts for the sale of stocks or bonds void, unless the seller at the time, was the actual owner or assignee thereof, or authorized by such owner or assignee to sell the same. A similar prohibition was made in England in 1733, but had no effect in stopping speculation, and was repealed in 1860. The New York statute was repealed in 1858, the language used being a complete reversal, providing that no contract should be void because the property sold was not at the time in possession of the seller. As Emery remarks: "this affirmatively legalized short sales."

In 1908, Governor Hughes appointed a committee to report upon the legal side of speculation in securities and commodities with a view to possible changes in the state laws relating to such. The committee reported the following year, pointing out several evils of organized speculation, and recommending some additions to the law of the state covering the subject. In the main, however, the committee felt that the evils could best be dealt with by the Governing Board of the Exchange itself, and took occasion to warn the Stock Exchange that if it did not assist in correcting the abuses that had sprung up, it would have only itself to blame if state regulation ensued. The committee defended "futures" and "short selling" as entirely legitimate and necessary accompaniments of modern, scientific business. It made little complaint of the New York Produce or Cotton Exchange, except to advise the discontinuance of dealing in mining stocks on the former and a more rigid suppression of inordinate speculation on the latter. As a result of the report, some important changes were made by the Stock Exchange

in its constitution. The other exchanges indulged in some discussion, but no law was enacted by the legislature.

In Pennsylvania, in 1841, an act was passed making short selling a misdemeanor, with a fine of from \$100 to \$1,000. Money paid was recoverable. This law was repealed 1862.

In Illinois, the following statute was passed at an early date:

"Whoever contracts to have or give himself or another the option to sell or buy at a future time any grain or other commodity, stock of any railroad or other company, or gold, or forestalls the market by spreading false rumors to influence the price of commodities therein, or corners the market, or attempts to do so in relation to any of such commodities, shall be fined not less than \$10 nor more than \$1,000, or confined in the county jail not exceeding one year, or both; and all contracts made in violation of this section shall be considered gambling contracts and shall be void."

In the ensuing court decisions "option" has sometimes been held to mean what it properly should, "puts" or "calls," but in other cases has been applied by the courts to the regular future contract where there was an agreement to settle by differences. The interpretation was that the party had an option of delivering, or settling by differences. The ordinary option or "privilege" is where the party may deliver or not as he elects. At any rate, it is said that the law has very little effect, options still being traded in to a large extent in Chicago, while corners and false rumors are not unknown.

In Massachusetts also, an act was passed in 1836 forbidding short sales of stock or bonds, but has not stopped speculation in that state.

With the exception of these few states where speculation developed comparatively early, there seems never to have been any widespread agitation against speculation until the early eighties following the "boom" period that came with the resumption of specie payments. In 1882, Ohio passed an act similar to that of Illinois, explained above. In 1885 a still severer act was passed condemning futures, but was repealed in 1889.

The constitution of California, adopted in 1879, contained a provision that "all contracts for sale of shares of capital stock of any corporation or association on margin, or to be delivered at a future day, shall be void, and any money paid on such contracts may be recovered." This section of the constitution was amended in 1908.

In Georgia, an act directed against future contracts was held by the courts to make ordinary exchange contracts illegal. Mississippi has a law, passed in 1882, which requires the mutual agreement of parties not to deliver to make the contract void. Tennessee, in 1883, Arkansas in 1883, Texas in 1885, South Carolina in 1883, Michigan in 1887, Iowa in 1886 and Missouri in 1889, passed laws the substance of which is that "futures" and "options" are illegal where there is no intent to actually receive or deliver the article sold.

In 1890, the Massachusetts legislature passed the following act: "Whoever contracts to buy or sell upon margins, without intent to actually receive or deliver, may sue for any payment made." The same year, a law in North Dakota restrained public officers from speculating while in office.

Through the nineties there was a temporary pause in legislative assaults upon speculation, the panic of 1893 apparently not being attributed to the direct efforts of speculators. In 1898, another period of legislative and executive activity began, with the movement against the trusts and monopolies as its main objective and the opposition to organized speculation a minor issue. This movement culminated in 1907-'09 as is indicated by the bills introduced in Congress, as well as the laws passed in the states, although agitation is still continuing, and with the change in the political complexion of the administration, there is a likelihood of a still greater amount of radical legislation.

In 1898, Louisiana adopted a new constitution providing that the legislature should pass laws to suppress dealings in options or futures on agricultural products or articles of necessity. Combinations to force the price of such products up or down for speculative purposes were declared unlawful. In conformity with this provision, the legislature, the same year, passed an act, prohibiting dealing in futures on agricultural products or articles of necessity, when the intention is not to make a *bona fide* delivery.

In 1901, Massachusetts amended the law of 1890, prohibiting wagering contracts in stocks or commodities where no purchase is intended. Lack of seller's ownership is evidence of a wagering contract.

In 1905, indications appeared of a discrimination on the part of legislatures between gambling and speculating. Minnesota passed an act prohibiting "bucket shops" and bucketshopping. North Caro-

lina made it a misdemeanor, on the other hand, to deal in "futures," pardon being given to the one turning state's evidence. North Dakota prohibited operations in bucket shops. In 1906, Georgia passed an act enforcing a penalty for dealing in futures. State's witnesses are given immunity. *Bona fide* trade not prohibited. In 1907, Alabama prohibited dealings in futures, making such contracts void and compelling witnesses to testify under immunity. Arkansas prohibited bucket shops, and dealing in futures, or on margins, witnesses testify under immunity. Florida made it unlawful to deal in cotton futures; Montana prohibited gambling and dealing in futures; Nebraska suppressed bucketshopping and gambling in stocks; and Vermont passed an act to restrain stock gambling.

In 1908, California by constitutional amendment made contracts relative to stock speculation void. The Louisiana legislature memorialized Congress to correct abuses of trading in cotton futures; and Mississippi prohibited bucket shops and made contracts for the sale of certain commodities, stocks and bonds, where actual delivery is not intended, void. Four states,—New York, Oklahoma, Rhode Island and Virginia—also defined and prohibited bucketshops.

In 1909, Kansas, New Hampshire, Arizona, Iowa and Tennessee passed laws substantially like the one here taken from the statutes of Kansas. According to this law, maintaining, or aiding in maintaining a bucket shop, is a felony. A bucket shop is defined as a place where the business is conducted of—(1) making or offering to make contracts for the purchase or sale of stocks or commodities, where both parties, or said proprietor, intend that settlement shall be based upon prices prevailing upon some exchange, without any *bona fide* transactions upon such exchange, or (2) where such contracts may be closed or terminated when the market quotations of articles dealt in shall reach a certain figure, or (3) when settlement is made by difference and no delivery or receipt is intended. Telegraph and telephone companies and their employees who permit the transmission or making of any such sales over their lines are guilty of felony, as are also persons knowingly allowing use of their buildings for such purpose. The mere offering to make such purchases or sales shall constitute a felony. The law also declares it the duty of every broker or commission merchant to furnish a written statement to the principal or customer of the name of the other parties to the con-

tract, the time of sale or purchase, the place of sale or purchase, and the price at which the transaction took place.

This act and the one of Iowa are intended to amend and take the place of repealed parts of earlier laws. Arizona prohibits "hedging" contracts, but provides that nothing in this act is to be construed to prevent *bona fide* dealings on boards of trade, or exchange. Wisconsin placed an unusual act on its books in the same year (approved June 10, 1909,) whereby sentence is provided of not more than ten years or less than one year in the state prison for any officer or employee of any bank, banking company or trust company, any executor, administrator, guardian, trustee, or receiver, or any other person holding property or money in any manner in a trust capacity, "who shall buy, sell, deal or traffic in any goods, stocks, grains, etc., by making or requiring any deposit, payment, or pledge of any margin or money to cover future fluctuations in the price of such articles." The same legislature also passed a joint resolution to the effect that "Whereas, the recent wheat deal has again demonstrated to the American people that even the bread supply of our land is at the mercy of speculators; and, Whereas, the recent panic has demonstrated that it is unwise and unsafe for our country to allow the control of our great commercial and industrial conditions to exist in the hands of stock gamblers without check of any kind, and, Whereas, it is of interest to all citizens to know the means by which the huge combine of money in Wall Street can be manipulated," etc.: "Be it resolved that the delegation in Congress be instructed to work for a thorough investigation of the Stock Exchange."

In 1910, various acts of a similar nature to those above were passed in Wyoming, Kentucky, South Carolina, New Jersey, Virginia, Louisiana, Rhode Island and Mississippi. Ohio penalized the making of false financial statements inuring to the benefit of the maker.

By the foregoing account, it is seen that this legislation is not confined to any part of the United States, but has been tried, or is being experimented with in almost every state of the Union. The history of such legislation, as well as its interpretation by the court of the various states, shows that the older commercial states have passed anti-option, future, or short-selling laws, discovered their ineffectiveness and undesirability, and repealed them, for the



most part, before the Civil War. The agricultural and newer states, particularly in the South and West, have passed the most stringent acts, with special attention paid to short-selling. Another point that may be noted is the absence of distinction between the bucket shops which are confessedly but gambling devices, and Exchanges or legitimate Boards of Trade. In part, this confusion has been caused by the practice of proprietors designating their gambling resorts as boards of trade, exchanges, etc., and equipping them with all the outward forms of the regular business. There seems, however, to be a trend of opinion toward the recognition of the important functions of the organized exchange, and at the same time, of the necessity of stamping out the bucket shop which mimics the operations of the former and uses its business standing as a cloak to protect its existence. The state of West Virginia is an exception, actually having a law licensing and permitting the operation of bucket shops.

The court decisions upon cases arising under these statutes are numerous and varied, depending upon the law and the state in which they were rendered. Some of the decisions in the same state are conflicting, especially in Pennsylvania, where there seems to be the greatest chaos and where the decisions are out of line with both the law of England and of this country.

It seems to be well settled, however, in the common law of England and the United States, and under the decisions of the New York and the highest Federal courts, that the sale of property to be delivered at some future time is entirely legal, even though the said property is not at the time of sale in the possession of the seller. It seems to be equally well established, in case the two parties to such a contract of sale intended at the time of sale not to make or receive an actual delivery, but to settle their bargain by payment of differences on the future price of the article in question, that the transaction is a gambling one and is void. As one judge has remarked, "the principle of the law is clear; the trouble arises when its application is attempted to a concrete case. Further, almost all discrepancy seems to arise through lack of a complete determination of the facts, or the unwillingness or inability of the judge to understand their real nature."

This latter feature has given rise to many contradictory decisions, and it may be well in view of the importance of this point to draw here some distinctions between gambling and speculation.



Both H. C. Emery and the Hughes Committee define speculation from the individual point of view as dealing in property with the intent to make a profit from its fluctuations in value, but the Hughes Committee goes on to say—in reference to speculation: “it may be wholly legitimate, pure gambling or something partaking of the qualities of both,” and after citing a legal definition of the two on page 4 of the report in pamphlet form, “the rules of all exchanges forbid gambling as defined by this opinion; but they make so easy a technical delivery of the property contracted for, that the practical effect of much speculation, in point of form legitimate, is not greatly different from that of gambling.” It is clear from these quotations that the Commission had in mind merely the moral and pecuniary effects of speculation and gambling upon the particular individual concerned, for no one could scarcely maintain that the effect upon prices of buying and selling, no matter how rapidly, or upon how slight a margin the dealing should be carried on, would be the same as when there were no purchases or sales, the settlement being made merely on the basis of prices established by other’s transactions. The definition framed by the committee would make the decision turn upon the character of the individuals engaged in buying and selling. If they failed, they were gambling, if they succeeded, they could be termed legitimate speculators. It is estimated that over nine-tenths of all who engage in business, fail to succeed. We may as well say that they are gamblers if we call the unsuccessful in speculation such. Of course, all events in life, all persons are subject to the universal uncertainty of our situation, but it is going a long way to apply the term gambling to the struggle for existence, unless we seek to justify the term.

As generally used, however, I believe “gambling” can be defined as the assumption of an unnecessary risk, when the risk applies only to wealth. By unnecessary, I mean unnecessary to the welfare of the community. It is the speculator who assumes the risk of changes in value which occur so rapidly and unexpectedly in certain securities and commodities. I cannot see what the condition of the individual’s mind, his knowledge of what he is doing, or his intentions, have to do with the nature of his activity in this case. Whether he believes he is unjustifiably gambling, or legitimately speculating, what he actually does is to contract to buy and sell property, and whether his contracts are “rung out,” or go through

the clearing house, what he has actually done is to receive or deliver or both receive and deliver, as the case may be, the property which he previously contracted to buy or sell. The fact that large numbers of ignorant and hopeful persons, trusting in their lucky star, persist in buying and selling grain and cotton on inadequate margins does not alter the essential nature of such transactions, although, of course, it may affect greatly the course of prices, and the welfare of those misguided individuals.

To meet the evil of speculation what is required is the elimination from the field of speculation of those who are unfitted by nature, financial circumstances, or training to engage in it. We select certain persons for the law, the practice of medicine and the ministry by means of certain rigid requirements, because we think those arts of too great moment to permit untrained men to engage in them. But there is no law prohibiting certain persons from buying and selling property; to make such a one would strike at the roots of personal liberty. The right to buy or sell, or to contract to buy or sell property is a fundamental one, and even when a small sum is paid to seal the bargain, and when the proportion of the capital of the individual to the value of the amount dealt in, is small,—even under these conditions, it is difficult to see how any law which did not seriously abridge the right of contract, could save people from themselves.

The two ways in which the "lambs" commonly lose their "fleece" is in buying unsound securities, and trading on a capital too small for the business done. The first method does not apply of course to commodity exchanges, but the second is peculiarly dangerous there. If brokers and bankers would discriminate between persons and require a margin ranging from twenty per cent to forty per cent, they could undoubtedly do very much toward reducing both speculation and losses on the part of those who rely for success more upon their "brains" than their wealth.

"Options" have been made the subject of more successful legislative onslaughts than "futures," most states having laws, and many exchanges rules, forbidding them. This is due to the ease with which they lend themselves to the attempts of the inexperienced to speculate, only a small capital being needed to indulge in their purchase. They serve, however, a legitimate business purpose, are entirely legal under common law, outside of the exchange, and under

the regulations of England, and the state of New York. "Puts" and "calls" in the market correspond exactly to options given on any piece of property to buy or sell at a certain price, a small sum being charged for the "privilege." Despite the prohibitory statute of Illinois, they are actively dealt in, in connection with the Chicago Board of Trade transactions.

"Corners" are sometimes based on a true estimate of the future price, sometimes on a mistaken one. In the former case, as in the recent Patten wheat deal, the price after the corner matures does not fall abruptly from the settlement price, and the operator reaps the reward of his superior foresight in determining wheat values. In the latter case, great fluctuations prevail, the "corner" is almost invariably broken, and the price falls lower than before the attempt to raise prices began, with the consequent ruin of the speculator. Laws can scarcely prevent any person from buying up any commodity of everyday trade and holding it for a higher price, but in so far as the exchange establishes an artificial supply and demand for a single month, it can also exert a certain authority in compelling a reasonable settlement price for the "shorts," and in preventing the matching of orders or "wash sales" for the purpose of creating temporary, and unusable, fictitious quotations.

One regulation by law cannot be advocated with too much zeal by all good citizens. That is the rigid suppression of all false and misleading rumors whether circulated designedly by those pecuniarily interested, or carelessly by the newspapers and other publications which delight in sensational tales. California and Ohio are the two states which have recently enacted a law to this effect. The statute of California reads as follows:

"Every person who wilfully makes or publishes any false statement, spreads any false rumor, or employs any other false or fraudulent means or device, with intent to affect the market price of any kind of property is guilty of a misdemeanor." This is the first step in the development of accurate knowledge of stock and commodity values on the part of the public.

Another movement, the converse of the above, which well deserves support is the demand for a more accurate, prompt and more frequent gathering and publishing of statistical information upon the state of growing crops, for it is upon such information that the forecasts of future prices are based. The government crop

report coming now once per month could well be made, in view of the amounts at stake, twice per month, or as often as the conditions of trade demanded.

As has been indicated elsewhere in this paper, it is the writer's belief that genuine and enduring reform in the practice of speculation upon organized exchanges can only come with the gradual growth of an enlightened commercial public, and the adoption of higher standards of social ethics by those who conduct the industrial enterprises of the land. The waning of the get-rich-quick-at-any-cost spirit and its replacement by the professional feeling of the physician, the teacher and the clergyman, evidences the growing recognition on the part of business men, whether banker, director or manager, of a fiduciary relation to the community which circumstances in the past have sometimes led the public to believe they had not discovered in them. The evils of the exchange are merely the evils common to all American business as it has been carried on, with the chief end in view, the making of an unlimited fortune in the least possible time. With the appearance of a new "spirit of the times," we may with confidence expect a decline of the "sharp practices" that have characterized business in the last decades.

## FACTORS AFFECTING COMMODITY PRICES

BY ROGER W. BABSON,

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After a most careful consideration of this subject, I have thought best to divide it into four distinct sections and will therefore discuss the matter accordingly. First, I will consider the general question of prices with special reference to the various index numbers used for experimental and other work. In the second section, I will explain the most advanced statistical work which has been done along these lines with special reference to Professor Irving Fisher's "Equation of Exchange," which, to my mind, shows accurately and concretely what factors affect the general price level. In the third section I will refer to other factors which affect the prices of special commodities, or commodities in special localities, and will quote thereon from leading authorities. In the fourth section I will discuss in detail the most advanced work which has been done towards the forecasting of future prices. This last section probably will be found most interesting, and those who have not time to read this entire article should be sure to read this final section entitled "How Commodity Prices May Be Forecast." The most valuable section, from a statistical point of view, will be

found to be Section II, wherein the formula,  $\text{Prices} = \frac{M V + M' V'}{\text{Trade}}$

is explained in detail. This formula has gradually been evolved during the past twenty years by the most constant work on the part of the nation's leading economists, and when its full significance is grasped by manufacturers and merchants, it is bound to have a distinct effect upon the business community.

### *I. General Consideration and Index Numbers*

In the discussion of the factors affecting prices, a misunderstanding often occurs through mixing *wholesale* and *retail* prices. The former are sensitive to commercial and industrial factors, while the latter respond much more slowly. On the other hand, the retail prices are more valuable when considering the cost of

living, and are the prices in which the consumer is more naturally interested. Moreover, although retail dealers immediately mark up their goods as the wholesale price increases, they are loth to mark down their goods when the wholesale price decreases. In this article the prices considered will be usually wholesale prices, and there are several indices available. Our own organization uses the Bradstreet figures, which go back through 1892.

There is another series of index figures which was originally brought out by Dun's commercial agency and which is designed to give the cost of the necessities of life for the individual. The numbers are based on wholesale quotations, the figure for each commodity being multiplied by the annual per capita consumption, in order to give its proper weight in the aggregate. The figures are given in dollars and cents, not being reduced to a percentage basis on the scale of 100. About 350 articles are represented, but no details are given as to the method of calculating the annual per capita consumption upon which the figures are based. This series has been criticised as giving too great importance to food products through the method of weighting the figures. The figures are published each month, but July 1st of each year is stated by the compilers to be the best index of the general state of prices.

There are also other tables which are based on the same assumption, but these are mostly for foreign price indices. Personally, these weighted tables do not appeal to me; but those who believe therein should read the article in the November, 1910, number of the "*Quarterly Journal of Economics*," by Professor Mitchell, of the University of California. This author has made a very complete study of index numbers, and he shows that ultimately practically all of the different systems give the same result, owing to the great force of the law of averages.

In short, I believe that the simple index as followed by Bradstreet is the most satisfactory for use in the end, and the nature of this method is briefly this. A number of commodities are chosen, and the total price of specified quantities of these articles is ascertained for a given day or averaged for a certain period. The price numbers thus computed are in some tables of index numbers used without further change. Usually, however, such numbers are reduced to percentages of one hundred as the base of comparison. The total price at a chosen date, or the general average for a



specified period, is taken as the base and represented by one hundred, and the price figures are quoted in terms of this base, upward and downward, as prices change. For example, if one hundred articles be chosen, and the total price of one pound of each be ten dollars on January 1, then, taking that figure as the base, or one hundred, the index number for February 1, would be one hundred ten, if the total prices of one hundred articles were found to be \$11 on that date, and it would be ninety, if the total prices were \$9, and so on.

The Bradstreet series gives the totals of the prices per pound of ninety-six articles, quarterly and monthly, since January 1, 1892. In the following table quarterly quotations are given for the entire series:

BRADSTREET'S INDEX NUMBERS OF WHOLESALE PRICES, QUARTERLY, 1892-1911

1892		1899	
Jan. 1	\$8.1382	Jan. 1	\$6.8020
Apr. 1	7.9776	Apr. 1	6.8786
July 1	7.3829	July 1	7.0918
Oct. 1	7.6089	Oct. 1	7.6396
1893		1900	
Jan. 1	7.8317	Jan. 1	8.0171
Apr. 1	7.8395	Apr. 1	8.1275
July 1	7.2869	July 1	7.7215
Oct. 1	7.1717	Oct. 1	7.7507
1894		1901	
Jan. 1	6.9391	Jan. 1	7.5673
Apr. 1	6.6660	Apr. 1	7.5263
July 1	6.5770	July 1	7.5151
Oct. 1	6.5566	Oct. 1	7.7276
1895		1902	
Jan. 1	6.8220	Jan. 1	7.6604
Apr. 1	5.9722	Apr. 1	7.7838
July 1	6.1204	July 1	7.8380
Oct. 1	6.5241	Oct. 1	7.9924
1896		1903	
Jan. 1	6.3076	Jan. 1	8.0789
Apr. 1	5.8691	Apr. 1	8.1247
July 1	5.7019	July 1	7.8706
Oct. 1	5.7712	Oct. 1	7.9083
1897		1904	
Jan. 1	6.1164	Jan. 1	7.9885
Apr. 1	6.0460	Apr. 1	7.9690
July 1	5.8537	July 1	7.6318
Oct. 1	6.4477	Oct. 1	7.9213
1898		1905	
Jan. 1	6.5784	Jan. 1	8.0827
Apr. 1	6.4286	Apr. 1	7.9996
July 1	6.5820	July 1	7.9160
Oct. 1	6.6962	Oct. 1	8.2298

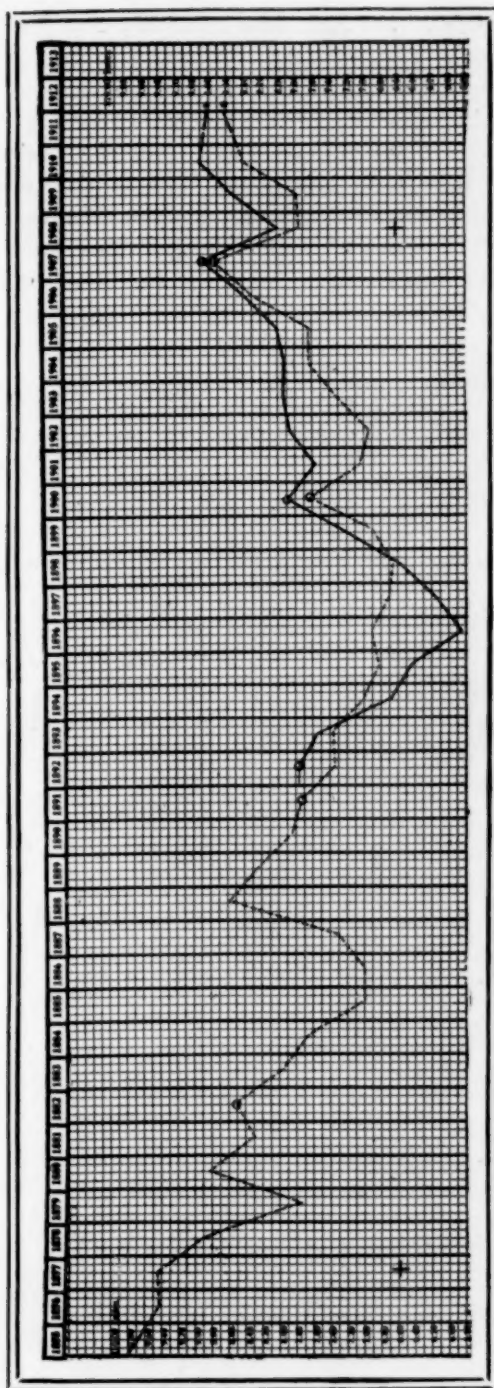
1906		1909	
Jan. 1.....	\$8.3289	Jan. 1.....	\$8.2631
Apr. 1.....	8.2087	Apr. 1.....	8.3157
July 1.....	8.2835	July 1.....	8.4573
Oct. 1.....	8.5580	Oct. 1.....	8.7478
1907		1910	
Jan. 1.....	8.9172	Jan. 1.....	9.2310
Apr. 1.....	8.9640	Apr. 1.....	9.1900
July 1.....	8.0409	July 1.....	8.9200
Oct. 1.....	9.8506	Oct. 1.....	8.9200
1908		1911	
Jan. 1.....	8.2949	Jan. 1.....	8.8361
Apr. 1.....	8.0650	Apr. 1.....	8.5223
July 1.....	7.8224	July 1.....	
Oct. 1.....	8.0139	Oct. 1.....	

## ANNUAL AVERAGES OF BRADSTREET'S INDEX NUMBERS

1892 .....	7.78	1902 .....	7.88
1893 .....	7.53	1903 .....	7.94
1894 .....	6.68	1904 .....	7.92
1895 .....	6.43	1905 .....	8.10
1896 .....	5.91	1906 .....	8.42
1897 .....	6.12	1907 .....	8.90
1898 .....	6.57	1908 .....	8.01
1899 .....	7.21	1909 .....	8.51
1900 .....	7.88	1910 .....	8.98
1901 .....	7.57		

The Bradstreet series is the only one that gives index numbers practically to date. All the index numbers show an advance of prices to 1907 as the high point, and a falling off in 1908. The Bradstreet table shows that the 1908 decline reached its low mark in June, and that the advance which set in then reached its high point January 1, of 1910. The average for 1909 exceeds that for 1908 by  $6\frac{1}{4}$  per cent. The advance represented by the high point of January 1, 1910, over the low mark of 1896, is sixty-one per cent; that the advance of the January 1 quotation over the average for the years 1892-99 is 36.3 per cent.

There is also the series published by the United States Bureau of Statistics of Labor, extending from 1890. Prior to 1890 the index numbers of the Aldrich report of 1893 furnish a record, running back to 1840. In examining these price records for the purpose of the present inquiry, it will be sufficient to go back only as far as the year 1890, since it is now possible to prepare our Composite Plot (see last section of this article) back only to said date. The index numbers compiled since 1892 by the United States Bureau of Statistics of Labor show the wholesale prices for each year from 1890. About two hundred and sixty commodities



## COMMODITY PRICES 1874-1911

The solid line is a plot of the American Prices, as determined by Bradstreet's Index, and the dotted line is a plot of the English prices as determined by the London Economist.

It is very noticeable that after the American prices are extremely high and the English prices have begun to decline, we usually soon witness a panic in the United States. Conversely, after the American prices are low and the English prices have begun to increase, the United States generally enjoys a period of prosperity.

are represented in this table. The base of the series is the average wholesale price for each commodity for the ten years 1890-99. The table on page 161 gives the index numbers of the Bureau for selected classes of commodities from 1890 through the last published report.

Among the foreign tables of distinct value are Sauerbeck's Index Table and the "Economist" Index Table. The following pertaining thereto was taken from the report on the "Cost of Living" prepared in May, 1910 for the Massachusetts Legislature. It is a very good explanation of these two indices.

The best record of British wholesale prices is the series compiled by Mr. Augustus Sauerbeck, published annually in the "Journal of the Royal Statistical Society." The tables include 45 articles. The base of comparison is the average price for the years 1876-77. In the following table the Sauerbeck prices for various commodities are given, the selection being made with a view to comparison with the American prices given in the United States Bureau of Labor reports:

SAUERBECK'S INDEX NUMBERS OF ENGLISH WHOLESALE PRICES, 1887-1908

Year.	Meat.		Wheat flour.	Butter.	Sugar.	Coffee.	Tea.	Potatoes.	Coal.	Leather.	Cotton.	Wool.	Average food.	Average, all Commodities.
	Beef.	Pork.												
1887.....	72	83	61	82	52	113	53	73	73	94	62	77	..	..
1888.....	78	77	65	80	57	96	50	69	75	87	62	77	..	..
1889.....	78	83	63	82	60	114	50	69	80	84	66	82	75	72
1890.....	76	81	63	80	54	123	51	69	86	81	67	76	73	72
1891.....	80	75	71	85	57	118	56	79	86	81	52	70	77	72
1892.....	76	92	61	86	58	113	51	69	84	81	46	61	73	68
1893.....	78	96	54	85	62	123	53	56	89	81	51	60	72	68
1894.....	74	85	48	78	48	117	47	60	75	78	47	55	66	63
1895.....	74	71	39	74	43	115	47	68	68	84	43	57	64	62
1896.....	68	67	54	78	46	109	46	47	68	84	48	62	62	61
1897.....	72	85	62	75	39	86	45	61	72	84	43	59	65	62
1898.....	72	87	72	76	40	78	46	70	76	84	37	64	68	64
1899.....	80	77	58	82	44	75	50	60	84	84	40	83	65	68
1900.....	84	85	60	82	46	74	49	67	107	87	61	76	69	75
1901.....	84	94	58	84	38	67	40	67	91	87	53	62	67	70
1902.....	94	92	56	82	30	64	38	59	84	87	54	72	67	69
1903.....	84	85	59	80	36	63	41	72	75	87	67	78	66	69
1904.....	84	75	62	82	44	72	43	77	74	87	73	77	68	70
1905.....	80	88	62	86	47	74	40	56	70	84	57	84	69	72
1906.....	80	94	58	88	36	73	40	57	75	94	66	87	69	77
1907.....	84	87	61	86	39	67	47	75	90	97	73	88	72	80
1908.....	90	83	60	91	43	62	46	60	82	91	64	76	72	73
1909.....	90	94	75	90	45	67	47	56	80	93	70	87	73	74
Per cent increase over low point.....	33.4	40.3	38.9	15.4	-2.2	-33.0	2.2	19.1	17.7	10.7	45.8	40.3	17.7	21.3
Average, 1890-1899.....	75.0	81.6	60.0	80.0	49.0	105.0	49.0	62.0	79.0	82.0	47.0	65.0	68.5	66.0
Per cent increase over average, 1890-99.....	20.0	15.2	25.0	12.5	-8.2	-36.2	-4.1	9.7	1.3	13.4	48.9	33.8	6.6	13.1

The increase of the 1909 average over the average of 1890-99 is 12.1 per cent; the increase over the low point of 1896 is 21.3 per cent. These

THE UNITED STATES BUREAU OF LABOR INDEX NUMBERS OF WHOLESALE PRICES, 1890-1908

Year.	Meat.		Wheat flour.	Beans.	Fish.	Eggs.	Butter.	Milk.	Sugar.	Coffee.	Tea.	Potatoes.	Coal.	Shoes.	House furnishings.	Lumber and Building Materials.	Clothing.	Average Food.	Average all Commodities.
	Beef.	Pork.																	
1890	85.5	96.0	120.6	121.5	108.6	96.1	100.4	103.1	138.5	96.3	96.3	119.3	98.8	104.8	111.1	111.8	113.5	112.4	112.9
1891	88.0	101.1	125.6	134.9	113.8	110.0	116.1	104.7	100.9	127.3	99.2	154.9	101.3	103.5	110.2	108.4	111.3	115.7	111.7
1892	88.0	110.4	104.2	112.0	99.2	110.4	116.4	105.1	89.4	108.9	106.0	91.1	109.3	102.7	106.5	102.8	109.0	103.6	106.1
1893	102.1	148.5	86.3	119.2	102.2	114.5	121.3	109.4	97.2	131.2	101.7	134.5	100.9	100.9	104.9	101.9	107.2	110.2	105.6
1894	99.8	112.1	77.6	110.6	92.9	93.5	102.2	103.1	83.9	126.0	98.0	122.8	97.3	99.4	100.1	96.3	96.1	99.8	96.1
1895	100.0	97.6	84.4	107.2	98.8	102.0	94.5	99.2	85.7	121.2	95.1	86.7	86.8	98.7	96.5	94.1	92.7	94.6	93.6
1896	90.8	79.7	91.2	70.3	92.0	88.7	82.3	91.8	94.5	93.9	91.0	39.4	98.7	99.6	94.0	93.4	91.3	83.8	90.4
1897	106.8	81.8	110.1	62.6	88.6	87.5	84.1	92.2	92.6	60.4	98.6	65.7	103.0	97.2	89.8	90.4	91.1	87.7	89.7
1898	111.4	86.4	109.9	74.7	94.4	92.6	86.8	93.7	108.0	48.2	104.2	102.1	98.6	96.3	92.0	95.8	93.4	94.4	93.4
1899	116.6	86.4	87.9	87.0	109.2	101.6	95.8	99.2	111.3	49.9	109.8	23.6	96.5	96.8	95.1	105.8	96.7	98.3	101.7
1900	113.4	108.7	88.3	125.6	112.0	100.7	101.7	107.5	116.7	62.6	104.9	74.9	102.4	99.4	106.1	115.7	106.8	104.2	110.5
1901	110.3	127.0	87.4	131.3	108.0	106.7	97.7	102.7	104.9	49.2	100.4	113.0	113.2	99.2	110.9	116.7	101.0	105.9	108.5
1902	130.3	149.0	89.7	115.0	107.0	122.7	112.1	112.9	91.7	44.6	106.2	119.4	118.4	98.0	112.2	118.8	102.0	111.3	112.9
1903	110.7	130.4	97.1	135.5	122.6	123.2	105.7	112.9	96.4	42.6	80.9	105.2	130.5	100.2	113.0	121.4	106.6	107.1	113.6
1904	113.0	114.9	125.4	120.4	123.6	135.0	98.4	107.8	101.9	59.6	97.1	146.3	130.4	101.1	111.7	122.7	109.8	107.2	113.0
1905	116.9	117.0	122.2	128.8	126.4	138.2	112.8	113.3	110.2	63.4	94.2	80.7	130.2	107.4	109.1	127.7	112.0	108.7	115.9
1906	110.2	139.0	96.8	113.8	130.8	133.2	113.1	118.0	94.8	61.8	82.8	109.1	130.9	121.8	111.0	140.1	120.0	112.6	122.5
1907	127.1	141.2	108.6	106.4	128.3	141.2	128.5	131.4	97.0	50.7	81.0	98.4	130.1	125.9	118.5	146.9	126.7	117.8	159.5
1908	148.2	159.3	118.8	138.9	124.9	142.0	122.1	139.0	104.8	47.8	75.1	142.6	130.1	121.3	114.0	133.1	116.9	126.6	122.8
Per cent increase over low point.....	63.2	62.2	30.3	83.4	35.8	60.1	48.3	41.5	9.8	-20.8	-17.5	259.4	26.3	24.8	26.0	47.2	28.3	43.9	36.9



increases may be compared with the advance of 22.8 per cent in the American Bureau of Labor wholesale prices in 1908 over the average for 1890-99, and that of 36.9 per cent over the low point of 1896. It appears from this comparison that the rates of increase in the United States have been double those in England. It should be borne in mind, however, that, as the English and the American numbers were computed on different bases, the comparison is not conclusive. Corresponding commodities have been selected from the Labor Bureau and the Sauerbeck tables, so far as this is possible, in order to facilitate detailed comparisons. This could not be done, however, in all cases, because many commodities are listed in the Bureau of Labor tables which are not found in the Sauerbeck tables, and in other cases there is a different classification.

A general similarity in the course of prices in the United States and England from 1890 to the present time is shown by the tables. In both countries from 1890 to 1896 or 1897 prices fell; then they began to advance, and continued with slight interruption to rise for the next ten years. The earlier decline was somewhat more pronounced in the United States; also, the later advance was more rapid and extensive in this country, particularly in the case of food products. The particular commodities which show a greater relative increase in the United States, are: butter, which has risen three times as fast as in England; meat, which has increased twice as fast; potatoes and coal. Shoes have risen in the United States more than three times as fast as leather in England.

The depression that took place in the United States in 1903 and 1904, notably in food products, was not paralleled in England.

It may also be noted that, while in England the price advance was general for all commodities, the advance in food stuffs was somewhat less rapid than that for others. In the United States the opposite was true; food products rose more rapidly than other commodities. In England, food products were barely 5 per cent higher in 1908 than the average for the period 1890-99, and were actually 6 per cent below the high prices of the early 90's. In the United States, food products in 1908 were over 20 per cent higher than the average for 1890-99, and were about 5 per cent higher than the highest point reached in the early 90's. Of the individual food commodities, beef shows the largest rate of increase in both countries, being 16.7 higher in 1908 than the average of 1890-99 in England, and 48.2 per cent higher in the United States. It should be observed, also, that the average of food products is lowered considerably by the inclusion of sugar, coffee and tea, since these commodities all show substantial decreases in England, and the last two in the United States. The index numbers published by the London "Economist" take as a base the average price of the six years 1845-50, as 100. The index number is the total of all prices of 50 odd commodities, estimated on this basis. No allowance is made for the relative importance of different commodities.

LONDON "ECONOMIST" INDEX NUMBERS, END OF DECEMBER, 1890-1909

1890 .....	2,241	1902 .....	2,003
1891 .....	2,133	1903 .....	2,197
1892 .....	2,120	1904 .....	2,136
1893 .....	2,082	1905 .....	2,342
1894 .....	1,923	1906 .....	2,499
1895 .....	1,999	1907 .....	2,310
1896 .....	1,946	1908 .....	2,197
1897 .....	1,890	1909 .....	2,390
1898 .....	1,918	1910 (Jan.) .....	2,373
1899 .....	2,145	1911 (Feb.) .....	2,396
1900 .....	2,125		
1901 .....	1,948		
		Average, 1890-99 ....	2,040



The increase shown by the preceding table is somewhat greater than that indicated by the Sauerbeck figures. The "Economist" numbers show the low year in England to be 1897, instead of 1896. It should be remembered, however, that the "Economist" figures are for December 31 of each year. The increase, February, 1910, over the average price, 1890-99, is 17 per cent, and over the low point, 1897, 26.7 per cent, as contrasted with 12.1 per cent and 21.3 per cent, respectively, as shown by the Sauerbeck tables.

There also are other indices for other countries, and the "Labour Gazette" of the Canadian Department of Labour publishes for Canada a Price Index for 225 commodities. In Germany, Dr. A. Soetbeer's record of Hamburg prices extending to 1891 is usually quoted. For France the most complete table of prices is that given in the Aldrich report of 1893.

Although it is not in the province of this article to discuss the history of prices during previous years, nevertheless the following, taken from the abovementioned report, is a most useful summary of conditions in this country and abroad from 1840 to date. In preparing this table, the Aldrich and the Bureau of Labor index numbers have been combined for the United States, while the Sauerbeck numbers have been used for England.

The table given on page 164 shows the movement of American and English prices of all articles and of food stuffs.

The salient features of the movement of prices as shown in the tables herewith produced are interpreted in the above report as follows:

1. A drop in prices, 1840-43, due to industrial depression.
2. A rise to 1847, which may be connected with bad harvests and the Irish potato famine in the case of English prices, and a high tariff in the United States.
3. A fall to 1849, more pronounced in England than in the United States, traceable to repeal of the corn laws, crisis and depression in England, and to reduction of the tariff in the United States.
4. An advance to 1857, due to an increase of the gold supply following the California discoveries and general prosperity.
5. A drop in 1857 and 1858, caused by crisis and depression.
6. Great fluctuations of American prices during the early 60's on account of war and disturbance of the currency system by greenback issues.
7. A sharp rise of American prices to the high point of 1866, due to the causes already mentioned.

## RELATIVE PRICES IN GOLD

Year.	All Articles.		Year.	All Articles.	
	Aldrich Committee.	Sauerbeck.		Aldrich Committee.	Sauerbeck.
1840	116.8	103	1875	113.4	96
1841	116.8	100	1876	104.8	95
1842	107.8	91	1877	104.4	94
1843	101.5	83	1878	99.9	87
1844	101.9	84	1879	96.6	83
1845	102.8	87	1880	106.9	88
1846	106.4	89	1881	105.7	85
1847	106.5	95	1882	108.5	84
1848	101.4	78	1883	106.0	82
1849	98.7	74	1884	99.4	76
1850	102.3	77	1885	93.0	72
1851	105.9	75	1886	91.9	69
1852	102.7	78	1887	92.6	68
1853	109.1	95	1888	94.2	70
1854	112.9	102	1889	94.2	72
1855	113.1	101	1890	112.9	72
1856	113.2	101	1891	111.7	72
1857	112.5	105	1892	106.1	68
1858	101.8	91	1893	105.6	68
1859	100.2	94	1894	96.1	63
1860	100.0	99	1895	93.6	62
1861	100.6	98	1896	90.4	61
1862	114.9	101	1897	89.7	62
1863	102.4	103	1898	93.4	64
1864	122.5	105	1899	101.7	68
1865	100.3	101	1900	110.5	75
1866	136.3	102	1901	108.5	70
1867	127.9	100	1902	112.9	69
1868	115.9	99	1903	113.6	69
1869	113.2	98	1904	113.0	70
1870	117.3	96	1905	115.9	72
1871	122.9	100	1906	122.5	77
1872	127.2	109	1907	129.5	80
1873	122.0	111	1908	122.8	73
1874	119.4	102	1909	.....	74

8. A fall of American prices to 1869, following the war, English prices remaining comparatively stable during the decade 1860-70.

9. An advance of American prices, 1869-72, and of English prices, 1870-73, due to business activity and speculation.

10. A fall of both American and English prices to 1879, in consequence of the panic of 1873 and demonetization of silver.

11. A rise of American prices, 1880-82, following the resumption of specie payments and the improvement of business con-

ditions; English prices, after a slight rise in 1880, continued to fall to 1887, on account of prolonged depression.

12. A drop in American prices to 1886, due to railroad collapse, followed by slight recovery.

13. A gradual decline of American prices to 1897, brought about by currency agitation and depression; English prices also moving downward slowly to 1896, after a slight rise to 1891, produced by trade activity.

14. A rapid rise of American prices and slower advance of English prices to 1907, caused chiefly by depreciation of gold, with a temporary decline in 1900, caused by the Boer War.

15. Fall of both American and English prices, 1907-10, on account of panic and depression.

## *II. Statistical Factors Affecting Prices*

The discussion as to what factors influence prices is one upon which economists and statesmen have dwelt ever since there has been a science known as "Political Economy." Although most of our great economists believe that the increased production of gold is the principal factor, yet there are many able men such as Professor Laughlin, of the University of Chicago, and Paul Leroy Beaulieu, of the Sorbonne, Paris, who believe that the increased production of gold affects prices very little. From the study, however, which my organization has given to the question, we believe that Professor E. W. Kemmerer, of Cornell University, and Professor Irving Fisher, of Yale University, have most correctly diagnosed the causes of the raising of the general price level.

These men believe the increase in gold and credits, including bank deposits subject to check, and especially an increase in the velocity of circulation of money and credits, are most vital factors in raising the price level. Certainly one dollar circulating twenty times a year has the same effect as twenty dollars circulating only once a year or ten dollars circulating twice a year. Thus, doubling the rate of circulation may have the same effect as doubling the gold production. Although many political economists have written volumes on this subject, these factors have first been stated in a definite concrete form by Messrs. Kemmerer and Fisher. In fact, it is to these men that I am indebted for the following equation and tables upon which this section is based.

The work was originally explained in Professor Kemmerer's book on "Money and Prices," published by Henry Holt & Company, and appears in its latest form in Professor Irving Fisher's new book entitled "The Purchasing Power of Money," published by the Macmillan Company. The work of these writers, reduced to its simplest form, is as follows: The *Price* of produce and commodities is always equal to the *Money in Circulation*, multiplied by its *Velocity of Circulation*, plus *Credits*, multiplied by their *Velocity of Circulation*, divided by the country's *Volume of Trade*. Moreover, the more one reads on the subject of prices, the more he is convinced that all of the volumes, monologues and theses written thereon can be reduced to the above simple proposition.

Mathematically, P is obtained from the following formula:

$$M V + M' V' = P T$$

In this formula:

M = Money in Circulation

V = Its Velocity of Circulation

M' = Deposits Subject to Check or "Credits"

V' = Their Velocity of Circulation or "Activity"

T = Volume of Trade

P = Price Level

Therefore:

$$P = \frac{MV + M'V'}{T}$$

which shows that as the factors M and M', or V and V' increase, P also increases and the price level advances. As V is fairly constant, this means that the increased price level of to-day is practically due to the increase in money, M (including gold, bank notes, etc.), to the increase in deposits subject to check, M', and to the increased velocity of circulation of moneys and deposits. The increase in M'V' is largely reflected in the great increase in bank clearings.

A study of the annexed chart (for the use of which I am indebted to Professor Fisher and the Macmillan Company) shows that this formula can be most graphically designated by a picture of a "balance" for each business year. For instance, in the top balance on the chart, for the year 1896, M is illustrated by a bag supposed to contain \$880,000,000 or the amount of money then in circulation, and the distance at which said bag is hung

GRAPHICAL ILLUSTRATION OF PROF. FISHER'S "EQUATION OF EXCHANGE"

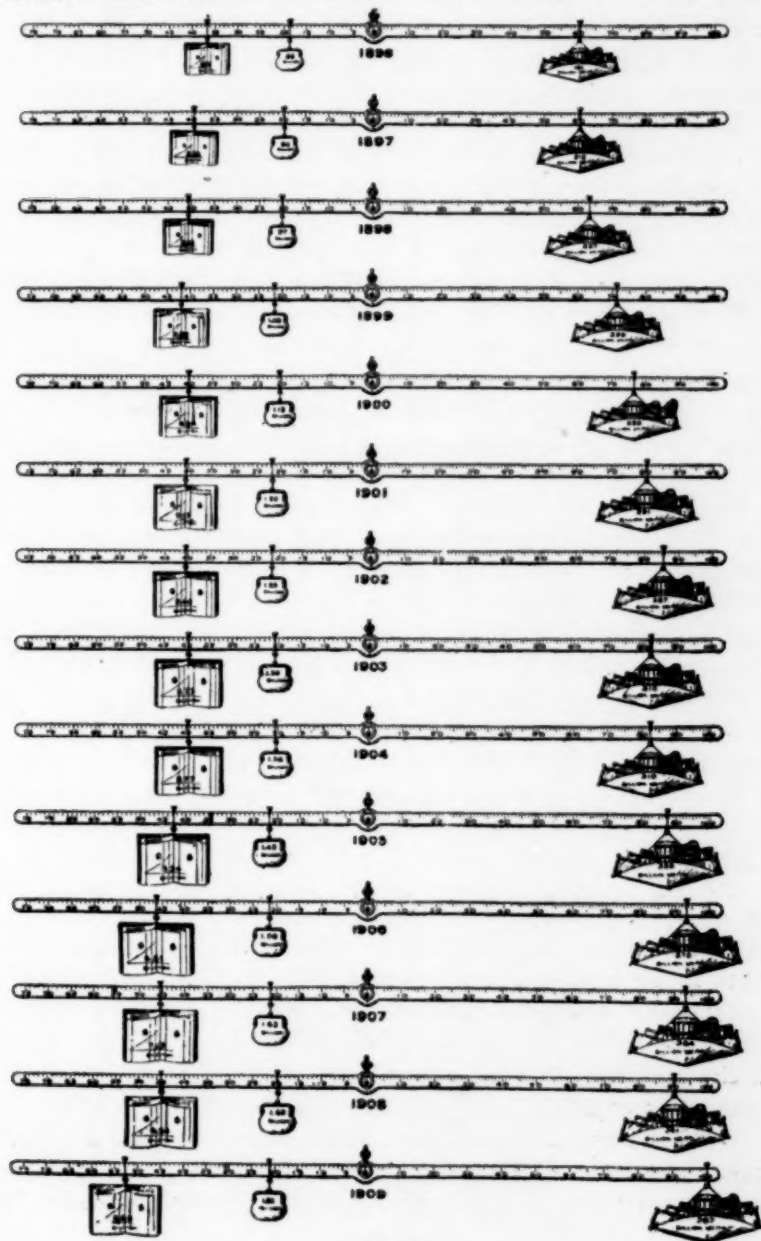


FIG. 17.

(Used by permission of Prof. Fisher and the Macmillan Company.)

from the pivot represents its velocity of circulation or  $V$ , which Professor Fisher finds to be nineteen times a year.

$M'$  is illustrated by a bank book showing the deposits subject to check, namely \$2,710,000,000 and the distance said bank book is hung from the pivot represents the velocity of said circulation or  $V'$ , which was thirty-seven times a year. The volume of trade is illustrated by a scoop hung from the right end of the balance representing \$191,000,000,000 worth of trade reckoned, not at the prices of 1896, but at the prices of 1909 which is the "base" year. (By reckoning the volume of trade of all years at the same prices—those of 1909—the scoop shows how these volumes of trade compare with each other *irrespective of the price level*.) *The distance of the scoop from the center, represents the price level or  $P$ , which is 60 per cent of the price level of 1909.* All these factors must be in equilibrium at any given time and if one is moved, one or more of the others must be adjusted to correspond. Therefore, as the conditions differ for each year, the pictures on the chart differ for each year and the changed conditions existing from 1896 to date are most graphically shown on this most interesting chart of Professor Fisher's.

Therefore, a glance at the distance of the scoop from the center shows how the price level has changed, while the other distances and weights graphically show the reasons therefor. The annexed chart does not show 1910 conditions; but the following figures are for 1910 and show that the "weights" on the left are about the same distance from the center as was the case in 1909, while the scoop is further from the center than ever.

$M$	$M'$	$V$	$V'$	$P$	$T$	$MV$	$M'V'$	$MV+M'V'=PT$
1.64	7.23	21	52.7	104.0	399	34	381	415 = 415

It might also be added that Professor Fisher's diagnosis for 1910 shows conclusively that the velocity of circulation of deposits *subject to check* is substantially the same in 1910 as in 1909 and much higher than in any other year, which is a disquieting symptom, indicating that our people are doing business on very low bank accounts compared with the expenditures which they are making.

When emphasizing the importance of this formula, I am always asked as to the figures used in working out the various factors. I will therefore describe in the briefest possible manner how



these figures are derived, supplementing the description with some tables from Professor Fisher's book on "The Purchasing Power of Money" and some additional figures prepared by my organization.

"M" is the estimated *Money in Circulation* in the United States, which includes coin and paper outside of the United States Treasury and banks of deposit and discount. The money in the United States Treasury is excluded because it is of no use to the merchants, and the bank reserves are excluded for the same reason. Although the following table, of course, is not absolutely accurate, yet it is made up from official statements and all government and other calculations are based thereon.

ESTIMATED MONEY IN CIRCULATION IN THE UNITED STATES (M)  
(In Billions of Dollars)

1896 .....	.87	1904 .....	1.37
1897 .....	.88	1905 .....	1.45
1898 .....	.96	1906 .....	1.59
1899 .....	1.03	1907 .....	1.63
1900 .....	1.17	1908 .....	1.63
1901 .....	1.22	1909 .....	1.63
1902 .....	1.26	1910 .....	1.64
1903 .....	1.38		

"M'", or the *Individual Deposits Subject to Check*, has been worked out especially for use in connection with this formula. The result is based on the figures for individual deposits, less the deposits in savings banks and in the savings departments of national banks. In fact, we are indebted to Mr. A. Piatt Andrew, Assistant Secretary of the Treasury and the expert of the National Monetary Commission for these figures, which show for the first time the actual *deposit currency* of the United States. The complete table is as follows:

ESTIMATED INDIVIDUAL DEPOSITS SUBJECT TO CHECK (M')  
(In Billions of Dollars)

1896 .....	2.6819	1904 .....	5.80
1897 .....	2.8019	1905 .....	6.54
1898 .....	3.1919	1906 .....	6.84
1899 .....	3.9019	1907 .....	7.13
1900 .....	4.2019	1908 .....	6.57
1901 .....	5.1319	1909 .....	6.75
1902 .....	5.4319	1910 .....	7.23
1903 .....	5.70		

To ascertain "V" is a work that cannot be briefly described,

as many theses have been written on this subject of itself. A full detailed description thereof, however, may be found in the Journal of the Royal Statistical Institute for December, 1909, entitled "A New Method of Ascertaining the Velocity of the Circulation of Money." This method has been most favorably commented upon by the leading economists of the world, and we are justified in taking their word for its correctness. Practically the work consists of obtaining by mathematical formulas the actual velocity or circulation for 1896, which was 19, and for 1909, which was 22 and interpolating the intermediate years. This gives the following table for "V":

ESTIMATED VELOCITY OF MONEY CIRCULATION (V)

1896 .....	19	1904 .....	21
1897 .....	19	1905 .....	22
1898 .....	20	1906 .....	22
1899 .....	22	1907 .....	21
1900 .....	20	1908 .....	20
1901 .....	22	1909 .....	22
1902 .....	22	1910 .....	21
1903 .....	21		

Briefly, this means that a given piece of money circulates on the average about 22 times a year.

"V" is ascertained indirectly. After obtaining M, M' and V, it is a simple matter to obtain V', for the following reason:

"The velocity of circulation of bank deposits is found by dividing respectively the total check circulation (M'V) by the bank deposits (M'). The divisor, M', has already been found. As to the dividend, M'V, this is practically the total of checks drawn in a year, for we may reasonably assume that, on the average, each check circulates against goods once and but once."

Moreover, the work which has been done by Professor Kinley, of the University of Illinois, enables one to obtain this data directly. Professor Kinley's special investigation was based upon the value of the checks deposited on July 1, 1896, which was about \$468,000,000. To quote again: "If we could assume that this day was an average day of the year, we should need, in order to obtain the total year's deposits of checks, simply to multiply this by the number of settling days in 1896, which was 305. But it happens that July 1 is an exceptionally heavy day in the deposit of checks. Making allowance for this fact, as indicated by the clearings of the New York clearing house, we

conclude that the total year's deposits of checks in 1896 were about 97 billions, with a probable error of some 5 or 6 per cent. Similar calculations for 1909 make the total check transactions of that year 364 billions. We have thus the value of the total check circulation (M'V') in the two years 1896 and 1909; and find them to be 97 and 364 billions respectively, indicating a prodigious growth in thirteen years. We have still to interpolate figures for intervening years. For the period between these two years, we have, unfortunately, no such data as those of Professor Kinley for 1896 and 1909. However, we can find an excellent barometer in the clearing house transactions; a barometer dependent partly on the clearings in New York City, but more on those outside of New York City. It is well recognized that, although the clearings in New York deserve an exceedingly large representation, their relative importance in the total clearings is exaggerated."

As to what relative importance should be given respectively to clearings in New York and to the outside clearings in order to obtain the best barometer of the check transactions for the entire country, it has been concluded that, if the outside clearings be multiplied by five and the result added to the New York clearings, the result will be a good barometer of check transactions for the United States.<sup>1</sup> By means of this barometer of check transactions, consisting of New York clearings plus five times the

<sup>1</sup>Although New York clearings constitute two-thirds of all clearings for the country, it cannot be imagined that the check transactions in and about New York form two-thirds of the check transactions of the United States. We have already seen that the reported check deposits in New York on March 16, 1909, amounted to 239 millions. This figure, being for New York, is probably nearly complete and indicates, as we have seen, an estimated average for the daily deposits in New York City in 1909 of 306 millions. This gives  $306 \times 303$  or 93 billions for New York City, for the entire year. Our estimate for the entire country was 364 billions, leaving 271 billions outside of New York City. Let us compare these estimated figures for check deposits with the figures for clearings. The New York clearings in 1909 amounted to 104 billions and those outside New York, to 62 billions.

The New York clearings (104) thus exceed the New York check deposits (93), probably because the clearings on account of outside banks include clearings representing banking transactions as distinguished from commercial transactions, since New York City is the chief central reserve city. The New York City deposits were thus only  $\frac{93}{104}$  or about 90 per cent of the New York clearings. Outside of New York, on the other hand, the deposits far exceeded the clearings, being in the ratio  $\frac{271}{62}$  or 4.4. These ratios between check transactions and clearings, viz., .90 for New York and 4.4 for "outside," would indicate that the published figures for clearings should be weighted in the ratio of 4.4 to .9 or about 5 to 1. That is, on the basis of 1909 figures, five times the outside clearings plus once the New York clearings should be a good barometer of check transactions.

outside clearings, and a knowledge of the actual check transactions in 1896 and 1909, one may easily derive from the "barometer" an estimate of the actual check transactions. The result is as follows:

ESTIMATED CHECK TRANSACTIONS (M'V')  
(In Billions of Dollars)

1896 .....	97	1904 .....	233
1897 .....	106	1905 .....	282
1898 .....	127	1906 .....	320
1899 .....	166	1907 .....	320
1900 .....	165	1908 .....	300
1901 .....	208	1909 .....	364
1902 .....	222	1910 .....	381
1903 .....	223		

Having obtained estimates of M'V' and having previously obtained estimates of M', it is easy, by simple division, to obtain V'. The results are as follows:

ESTIMATED VELOCITY (V') OF CIRCULATION (BY CHECKS) OF DEPOSITS  
SUBJECT TO CHECK

1896 .....	36	1904 .....	40
1897 .....	38	1905 .....	43
1898 .....	40	1906 .....	47
1899 .....	43	1907 .....	45
1900 .....	39	1908 .....	46
1901 .....	41	1909 .....	54
1902 .....	41	1910 .....	52.7
1903 .....	39		

We have now, as will be seen, determined M and M' and V and V', thus leaving only one factor to be determined, namely, the Volume of Trade, or "T". This has been ascertained by the most careful research work and the data reduced to a common index number for each year as given in the following table which represents the volume of trade in billions of dollars as reckoned at the prices of 1909:

ESTIMATED VOLUME OF TRADE

1896 .....	209	1904 .....	324
1897 .....	239	1905 .....	378
1898 .....	260	1906 .....	396
1899 .....	273	1907 .....	412
1900 .....	275	1908 .....	381
1901 .....	311	1909 .....	399
1902 .....	304	1910 .....	399
1903 .....	335		

These index numbers for "P" are based on the data for 44 articles of internal commerce, 23 articles of import and 25 articles

of export. Sales of stock, railroad freight carried, and letters mailed through the post office are also included. In short, the increase in "T" practically coincides with the increase in our line of growth on the composite plot. For instance, on the above table it will be seen that the index figures for the volume of trade increased 18 per cent from 1893 to the present time which corresponds to a similar per cent grade of our line of normal growth.

We now have figures for all factors in the equation, and to ascertain the price level at any given time, it is necessary only to bring these figures up to date, using the above figures in the formula, and the price level, or "P", is apparent. But this formula is not based simply on the theory that the prices of commodities are and will be dependent on these five factors; but the formula can be absolutely demonstrated, which is what Professor Fisher has done. For instance, the following table gives the index number of general prices based on figures prepared by the Bureau of Labor at Washington and after "P" has been worked out independently by the above formulas for the various years from 1896 to 1910 inclusive, the results will be found to compare almost exactly with the index numbers for "P" as given in this table.

INDEX NUMBERS OF GENERAL PRICES

1896 .....	63	1904 .....	85
1897 .....	64	1905 .....	91
1898 .....	66	1906 .....	96
1899 .....	74	1907 .....	97
1900 .....	80	1908 .....	92
1901 .....	84	1909 .....	100
1902 .....	80	1910 .....	104
1903 .....	87		

The above table is based on the figures of the Bureau of Labor for wholesale prices; its only difference from the Bureau of Labor figures is that the above index numbers include prices of securities and wages. When it is considered that in no case have any of these factors, including the above index numbers, been changed more than two or three per cent, in order to demonstrate the formula, there can be no doubt but that *the prices of commodities are dependent upon the money in circulation multiplied by its velocity plus the credits multiplied by their velocity divided by the volume of trade*. Therefore, whatever may be written relative to factors affecting prices and however we may be criticised for endeavoring to reduce these factors to a concrete formula, I am

nevertheless convinced that the formula is correct and that all contradictory work is fundamentally wrong. *If so, the factors affecting prices are self evident.*

### III. General Factors Affecting Prices

Although the above formula shows clearly the cause of raising the price level as a whole throughout the world, yet I recognize that there are other factors affecting the price of certain commodities and of certain products. Moreover, there are other factors which make the prices different in different localities. Among these factors may be mentioned the changes in expenses of production, tariffs and taxation, wages and unionism, changed agricultural conditions, monopolies and "Trusts," general extravagance, competitive advertising and speculation. These factors are not the factors which raise the price level as a whole and are not fundamental factors; but are factors to consider when referring to different figures in different localities. Instead of preparing more original matter on this point, I herewith quote again from the report of the Massachusetts Legislature (House Document, No. 1750) and also give some extremely good comments on the most important of these factors by well-known men.

The following table presents an analysis of the causes assigned for the increase of prices by the writers of thirty articles that have appeared in print since January 1, 1910:

Causes.	Number of Articles Written Therein.	
	Principal Cause.	Contributory Cause.
1. Increase of gold supply.....	17	4
2. Exhaustion of natural resources.....	4	8
3. Rising standard of living.....	2	3
4. Withdrawal of population from agriculture, and growth of cities.....	2	1
5. Trusts and combinations.....	2	10
6. Tariff.....	1	7
7. Labor unions.....	1	3
8. Growth of population, and unscientific methods of farming.....	1	4
9. Extravagance in expenditure.....	..	6
10. Waste and fraud in distribution.....	..	5
11. Uneconomical marketing and housekeeping....	..	3
12. Speculation.....	..	3
13. Immigration.....	..	2



"The figure given in the first column of the table, under the head 'Principal Cause,' indicates the number of writers who assign the chief importance to the factor in question; that given in the second column, 'Contributory Cause,' shows the number who regard the influence of the cause enumerated as secondary. It appears that seventeen out of the thirty writers attribute the advance of prices mainly to the increase of the gold supply; four others regard this cause as of secondary importance. Exhaustion of natural resources, resulting in diminished returns from agriculture, increased expenses of production and pressure of population on the land, is given the first place by four writers; eight others ascribe secondary importance to this factor. A rising standard of living is believed to be the primary cause of higher prices by two of the contributors of the recent discussion; three others assign some weight to this influence. Withdrawal of population from agriculture, and growth of the cities, which are both consequences of the concentration of population, are regarded as the main factor by only two writers, and as a secondary cause by one. The growth of population in general, combined with unscientific methods of agriculture, resulting in disproportion between the population and the food supply, is selected as the first cause by one observer; this cause is given secondary importance by four others. Two writers place the responsibility chiefly upon the trusts and combinations, and ten others assign more or less importance to this cause. The tariff is assigned as the primary cause by only one writer, but is held to be a contributory influence by seven others. Similarly, the influence of labor unions is declared to be the chief cause by one person, and is mentioned also by three others. The foregoing are the only influences that are regarded as chief factors in the advance of prices; the others are regarded by all the writers as of secondary importance, in varying degrees."

The manner in which the chief causes are assumed to operate in bringing about an advance of prices is set forth in the following extracts from the papers summarized in the preceding table:

*1. Increase of Gold Supply*

To say that the present high prices are due to trusts will not explain the similar rise of prices in cases where there are no trusts in those particular commodities in this country, or no trusts at all in other countries where the rise of prices is also well marked. To say that high prices are due to the tariff does not explain the similar rise of prices in England, where there is

no protective tariff. To say that high prices are due to labor unions or to the associated action of labor does not explain the rise of prices in the Orient, where there are no labor unions. To say that rising prices are due to the growth of population does not explain the falling prices of a decade ago, when population increased at virtually the same rate. During the free silver agitation the favorite argument of men like Mr. David A. Wells was that falling prices were due to the progress of invention. Yet the progress of invention has continued unabated during the past twelve years, and yet prices have risen instead of falling. It is obvious, then, that apart from the minor oscillations in any one commodity a general change in the level of prices can be explained only by a cause which attaches equally to all prices. Now, price in general is value expressed in terms of money; hence a general change in the price level means a change in the value of money. But the value of money, like the value of everything else, depends on the relation of the supply of money to the demand for money. From the point of view of supply the answer is easy. The standard of the civilized world is now, and has been for some time, gold. . . . Gold, in other words, is being turned out in such enormous quantities that it is falling in value. But a fall in the value of gold, other things being equal, is tantamount to a rise in general prices. (Prof. E. R. A. Seligman, Columbia University, in "Journal of Commerce and Commercial Bulletin," January 3, 1910.)

### 2. *Exhaustion of Natural Resources*

We have begun to feel this land crowding effect. Agriculture on the average has begun to grow more intensive. If inventions and discoveries of the future are to annul or reverse this effect, they must be of a different kind from those that have given us our seeders, reapers, threshers, etc. We shall need thereafter, not something that will enable a man to till more acres, but something that will enable him to get greater and greater returns from a single acre. We have reached the beginning of the period of increasing intensiveness of agriculture, and by one of the cardinal laws of economics that process means a diminution of the per capita returns. Labor creates and gets less and less, all other things remaining the same, when it tills each acre more and more laboriously. (Prof. John Bates Clark, Columbia University, in the "Independent," March 10, 1910.)

### 3. *Rising Standard of Living*

Ordinary explanations, such as the tariff, the trusts, the unions, etc., fall short of satisfying the observer who takes a broad view of the situation. These agencies may in a measure contribute, but the controlling cause lies deeper; it is, in fact, within ourselves. Food, shelter, clothing, education and society are five necessities of civilized existence. Are we now content with the same quality and quantity of any one of these requirements that satisfied us in previous times? . . . The spread of popular education has brought about a decided and general advance in the standard of living, affecting every class of society. . . . In all the five principal items of the working-man's cost of living, his demands and the demands upon him have largely increased. In the middle classes the general increase in desires as to food, homes, clothing, education and society has been more marked, while among the wealthy there has been a significant growth in the indulgence of extravagant tastes in every direction; the result is a demand, hitherto unequaled, for all classes of luxuries. This leads up to the heart of the situation. Prices are established by the relation of the supply to the demand; production in this country, while steadily increasing, has not kept pace with the vastly enlarged demand brought on by the rapid growth of the desires of all our people. To this cause in largest measure

may be traced the conspicuous rise in the cost of living. Of course tariffs have their influence in artificially accentuating the short supply of certain commodities in various localities; trusts and labor combinations are also factors; but these are small items compared to the great underlying cause, namely, the change within ourselves,—our greater needs, our broader desires for the necessities, the comforts and the luxuries of life. When the supply of commodities is increased so as to keep pace with our demands, or when our demands are restricted to present production, the prices of items making up our cost of living will be reduced. (Marcus M. Marks, President National Association of Clothiers, New York, in the "Delineator," April, 1910.)

#### 4. *Withdrawal of Population from Agriculture, and Growth of Cities*

There are many reasons to account for the increased cost of living. The number of persons growing wool and cotton and leather, and those devoting themselves to the growth of wheat and meat and vegetables, while increasing in actual numbers, is decreasing in proportional numbers. Thus the consumer is rapidly gaining in numbers on the producer. This it may be said, is compensated for by the increased efficiency of the producer. It requires less labor, for instance, at the present time to produce a given unit of raw materials than in former years. It is true that labor-saving machinery has done much, but the fertility of the soil has diminished because of a lack of sufficient knowledge of the proper methods of its conservation. The labor, likewise, is greatly increased in price; so I take it that the initial cost of production is greater now than in former years. This, together with the increased demand, has produced a natural increase in prices which cannot be corrected unless the relations existing between the producer and consumer are changed. It is not likely that this will take place; on the contrary, owing to the difference in methods of living and the attractions which gregarious life has for the human race, there will be, in my opinion, even a greater disproportion existing between consumer and producer. This is offset to a certain extent by the fact that consumers, especially those who reach a competence, are almost universally in their older days possessed with a desire to return to the soil and indulge in the production of the necessities of life. This return to the soil, though, does not by any means compensate for the exodus from the soil to the city. (Dr. Harvey W. Wiley, Bureau of Chemistry, Department of Agriculture, symposium in the "Delineator," April, 1910.)

#### 5. *Trusts and Combinations*

As a general proposition, it is true that no general economic condition is due to any one cause. The industrial trust has, however, had a very important influence in bringing about the increase in the cost of the necessities of life; for these combinations have in effect repealed the law of supply and demand and done away with the old theory that "competition is the life of trade." A concrete example will serve as an illustration. In 1896 oil was selling in St. Louis, Mo., for 6½ cents a gallon. Ten years later, at the time I instituted suit in the name of the State of Missouri against the Standard Oil Trust, it was selling for 9½ cents a gallon. During this period the production of crude petroleum throughout the country had almost doubled, with a consequent decrease in price, while the production in the Kansas and Oklahoma oil fields had increased from 81,000 barrels in 1901 to 12,000,000 barrels in 1906, and its price had declined from \$1.20 a barrel in 1901 to 40 cents a barrel in 1906. The competition made possible as a result of this litigation brought about a reduction in the price of oil in the State of Missouri from 9½ cents in 1906 to 6½ cents in 1908. (Herbert S. Hadley, Governor of Missouri, in the "Delineator," April, 1910.)

6. *Tariff*

In my judgment, the causes are to be found, not in cheapened gold, but in the forces increasing the expenses of production of goods. The first of these is the high rate of taxation imposed by the Dingley tariff act of 1897 and continued by the tariff act of 1909. The price of goods affected shows marked decline after the panic of 1893 and the passage of the Wilson act; then, after the passage of the Dingley act there followed a portentous rise of prices, *e.g.*, blankets, hosiery, shirtings, woolen suitings, overcoatings, sheetings, worsted yarns, women's dress goods, lumber, zinc, axes, files, door knobs, etc. The most serious effect of the tariff was the increased cost of wool and of the various materials of manufacture, whereby the prices of the goods using these materials were raised far higher than the mere rise in the cost of materials, since finished goods received compensating duties for the raw materials and abundant protective duties besides. The National Association of American Manufacturers is to-day agitating for a lower tariff, especially on materials, because our manufacturing costs make it impossible to compete with other countries in foreign markets. (Prof. J. Laurence Laughlin, University of Chicago, in the "Delineator," April, 1910.)

7. *Labor Unions*

There is general complaint about high prices of the necessities of life, various reasons being assigned for the same, chief among which are the tariff and the capitalistic trusts; while as a matter of fact the primary cause of the constantly advancing prices of commodities of all kinds lies at the door of the labor trust, a cardinal principle of which is to raise wages and restrict production, neither of which can fail to diminish the purchasing power of the dollar, and when working together they doubly depreciate its value. Therefore, just as long as the labor trust is permitted to interfere with the law of supply and demand by restricting production and artificially advancing cost of commodities by abnormally high wages, just so long will our industrial affairs remain in a state of chaos and unrest, and just so long will that great portion of the public who cannot unionize be compelled to suffer the consequences. Why not strike at the root of the evil, and put the labor trust out of business first, instead of helping it on toward its "goal," as some well-intentioned men are blindly doing? (John Kirby, Jr., President National Association of Manufacturers, New York, in the "Delineator," April, 1910.)

8. *Growth of Population, and Unscientific Methods of Farming*

The growth of population, which is simply another name for increased consumption, has overtaken production of food-supplying cereals and meats; and as the converging lines of production and consumption approach each other, prices must advance. . . . I doubt if any country in the world excels the United States in natural fertility of soil, or has a more favorable general climate; but with our careless, uninformed methods of seed selection, fertilization and cultivation, our farms produce an annual yield of less than 14 bushels of wheat per acre, as compared with 32 in England, 28 in Germany, 34 in the Netherlands and 20 in France. The United States produces something less than 23 bushels of oats per acre, while England produces 42, Germany 46 and the Netherlands 53. Potatoes, with wheat and corn, are a food staple of the poor man. Germany, with an arable area of less than some of our largest states, produces more than seven times the number of bushels of potatoes that are produced in all the states. The increased value of corn, wheat, oats and barley in the United States, provided the average yield per acre of the same crops in Germany had been raised, and assuming a production of 50 bushels of corn to the acre, would have amounted to three and one-quarter billion dollars for the crop for

1909; and undoubtedly this increased production of grain would have enabled this country to have held the first place as a meat-exporting nation, which we have been compelled to surrender to Argentine. If population and consumption increase in the future as rapidly as they have during the last ten years, and production per acre of our farms is not greatly increased, within five years from the present, or before 1915, this country will have ceased to be a food-product-exporting nation; and within ten years we shall be importing more grain and meat per annum than we have ever exported in any one year for an average of five years, in our history. What will be the cost of living, under these circumstances? (W. C. Brown, President New York Central Lines, in the "Delineator," April, 1910.)

Personally I am very much interested in this subject of "The Depletion of the Soil." Many are well acquainted with the study which Mr. J. J. Hill has made relative to this special topic and the warnings which he has continually given; but it is very certain that the country as a whole has not begun to realize the importance thereof. In short, next to the increased production of gold, the "Depletion of the Soil" is a very important factor in causing the present high cost of living and influencing commodity prices.

We have not the exact figures, but I understand that chemists estimate that about twenty per cent of the value of each year's crop should be used for fertilizing the next year's crop. In other words, about twenty per cent of what comes from the soil should go back to the soil. Of course, these details are for the chemist to discuss, rather than the economist; but the general subject is of great importance to all. Of course, a proper proportion of that part of our crop which is consumed on the farms and rural districts, is now returned to the soil; but all that remains of the great portion consumed in our cities enters the sewers and eventually finds its destination in the sea, and consequently is lost so far as immediate practical value is concerned. In fact, it has been estimated that about \$2,000,000,000 a year is wasted through the sewers. In other words, to replace the values of the refuse passing through our sewers, by purchasing fertilizer at current market prices, would cost \$2,000,000,000 a year.

#### *IV. How Commodity Prices May be Forecast*

This in reality is a subject by itself, and thus is difficult properly to treat in so short a space. However, as the average man is much more interested in the present and future than in the past, I cannot close without giving a brief description of the very important work which is now being done along the line of forecasting commodity prices.



Up to within the last few years, economists have been divided into two "schools," when discussing the course of future prices. One school has considered simply the element of time, believing that there is a periodic rhythm in the course of prices and that a period of low commodity prices comes approximately every so many years. They believe that this period is—within a certain number of years—again followed by another period of high prices, and so on. Believers in this theory, however, disagree as to the length of the periods. Although all unite that the major period is approximately twenty years, the length of the average business generation, yet they differ as to the duration of the minor cycle, some believing that a period of low prices comes every five years, some every ten years, and some at still different rates. The fact that these men differ so as to the duration of said period of time is, to my mind, one reason why they are wrong in their assumption. In fact, I strongly believe that there is no economic basis for the statement that prices of commodities must rise and fall according to any period of time basis.

The other school bases its prognostications on the theory that price movements are due to the intensity of the period;—to wit, that prices will continue to increase until they reach a certain height, when prices will then decline. They believe that the decline will continue until prices reach a certain low point, when prices will again begin to increase. Their reasons are very plausible, claiming as they do that the high point is reached when prices exceed their value and usefulness to the commodity, and the low point is reached when the price is equal to or less than the cost of production. On analyzing these reasons, however, they will be found to be very superficial, as the value is an indeterminable quantity, and the cost of production is very variable.

It might be said that the men who believe that everything is regulated by supply and demand also come under this heading; but the terms "supply" and "demand" are very indefinite and mean nothing of themselves. In fact, if one of these "supply and demand men" is asked to name the causes of the supply or the causes of the demand, he immediately places himself directly into one of these two "schools" of thought. Therefore, it may fairly be said that, up to the present time, most students of fundamental conditions have been divided into these two schools, one basing their prognostications on the factor of time and the other on the factor of intensity, or, in



this case, prices. Neither of these two schools of thought has true economic reasons for their theories, and this doubtless is why said theories have failed to demand more serious consideration.

In more recent years, however, there has developed a third school of thought which bases its prognostications on what is known as the "area theory." This area theory considers both the factor of time and the factor of intensity, or prices. Their prognostications of prices are based on the product of these factors of time and prices, or, in other words, on the area consumed.

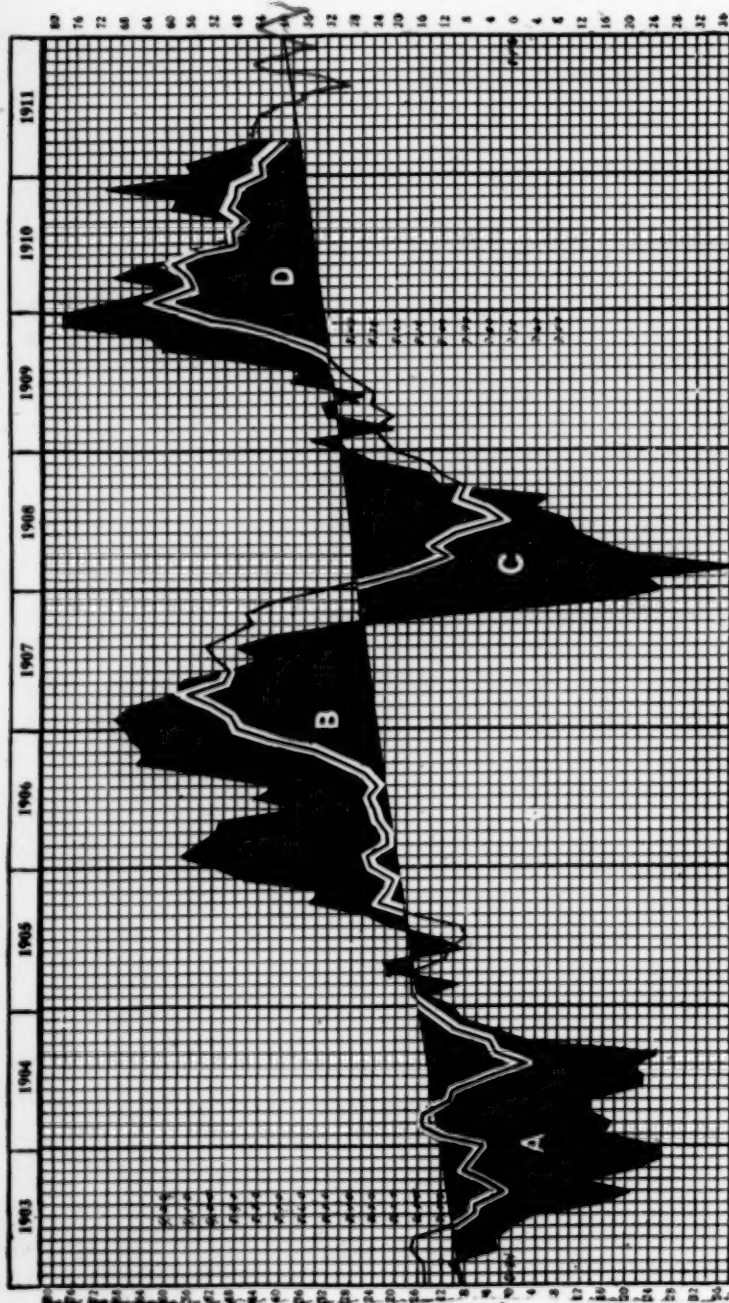
In short, this new school draws an oblique line, with a slope based on the normal increase in the nation's volume of trade, possibly somewhat as represented by "PT" or by "T" in Professor Fisher's formula. Starting at a time when the business of the country is practically normal, such as early in 1903, actual business conditions are plotted from month to month. This gives certain areas below and above this line of normal growth, and these areas are designated on the annexed plot as A, B, C, and D. In order to plot business conditions from week to week, the following twenty-five subjects are considered and combined under twelve headings: (1) Building Construction, (2) Money in Circulation, (3) Comptroller's Reports, (4) Loans of the Banks, (5) Cash held by Banks, (6) Deposits of Banks, (7) Surplus Reserves of Banks, (8) Total Bank Clearings, (9) Bank Clearings excluding New York, (10) Stock Exchange Transactions, (11) New Securities, (12) Business Failures, (13) Labor Statistics, (14) Imports, (15) Exports, (16) Balance of Trade, (17) Gold Movements, (18) Foreign Money Rates, (19) Political Factors, (20) Production of Gold, (21) Commodity Prices, (22) Crop Conditions and Iron Production, (23) Railroad Earnings, (24) Idle Car Figures, (25) Political and Social Statistics. The twelve headings are:

#### MERCANTILE CONDITIONS

Bank Clearings.	Failures.
Immigration.	New Building.

#### MONETARY CONDITIONS

Domestic Monetary Conditions.	Foreign Monetary Conditions.
Surplus Reserve.	Commodity Prices.



COMPOSITE PLOT OF THE SUMMARY FIGURES FOR AMERICAN BUSINESS CONDITIONS.

NOTE: The large black areas are formed by combining and plotting figures for the past nine years on New Building, Crops, Clearings, Iron Production, Money, Failures, Idle Cars, etc., in order to give a Composite Plot of actual business conditions in the United States. The line XY represents the normal growth of the country's business, the slope being changed whenever there is a change in the trend of conditions as shown by clearings, etc. Based on the economic theory that "action and reaction are equal" when the two factors of time and intensity are multiplied to form an area, the sums of the areas above and below said line of normal growth XY must, over a sufficiently long period of time, be equal, provided the line XY is properly located and enough subjects are herewith included, with all properly weighted and combined. Moreover, owing to the law of averages and certain psychological laws, these separate areas tend to be equal in area, although not necessarily in shape. Thus before there is another panic or depression (which will cause another area to be formed below the line XY) the area D will expand to approximately the size of the average of areas "A," "B," and "C." It, however, should be remembered that this next area (which will be called "E"), may be of an entirely different shape from anything heretofore witnessed and still contain a similar area, according to whether there is to be a panic or simply a gradual liquidation. Knowing that the areas tend to be equal, one can always estimate the length of any period by watching each week its height, or "rate of flow," which shows how rapidly it is being consumed. The solid black line represents Bradstreet's Index numbers for Commodity Prices. A study of this line shows that a high point of commodity prices has come when the prosperity area is about two-thirds consumed, and the low point has come when the depression area is about two-thirds consumed, although this does not work out well in the case of area "D" as the Bradstreet's Index contains cereals which declined in price during 1910 owing to the extraordinary favorable weather conditions. To use this Composite Plot in connection with one's own business, the observer should plot his own sales thereon and note what portion of the respective areas has been consumed when his own sales were greatest or smallest. When using this plot for other purposes, it should be remembered that it refers to the *major* cycles and not to the *minor* cycles.

## INVESTMENT CONDITIONS

Prices of securities and shares traded in on the New York Stock Exchange.

Condition of Leading Crops.      Railroad Earnings.  
Political Conditions.

After obtaining such data each week, the latest figures on each subject are reduced to index figures, on the same principle that the London "Economist" reduces the prices of a number of different commodities to one common index figure. This index figure is a sort of "barometric index" showing, each week, the general business conditions throughout the entire country. By systematically plotting each week this barometric index number one has the outline of a plot that shows graphically general business conditions as determined by fundamental statistics.

In the plot reproduced herewith the large black areas—A, B, C, and D—are the result of such an outline obtained in such a manner and representing the past seven years. This is known as the Composite Plot of Business Conditions. This Composite Plot shows, first, the business conditions existing to-day compared with any other time since 1902; and, secondly, based as it is upon the law of "action and reaction being equal when the total force involved is considered," it indicates how much longer present conditions are to last.

This Composite Plot, therefore, shows merchants the actual conditions existing at any given time and, on the assumption that these areas tend to be equal in area, not in shape, it aids them in forecasting future conditions by showing whether the next area may be expected above or below the line of normal growth and about how long before it will come. Of course, this third school simply combines the work of the two former schools, as such men consider both time and prices, instead of simply one of these two factors. On the other hand, a little thought shows how reasonable is this third theory and how it automatically adjusts itself to conditions the same as a "governor" on an engine. For instance, if prices increase twenty-five per cent above normal, it is not reasonable to think that they will continue to go up until they reach the last previous high price of one hundred per cent, irrespective of the time consumed, but

it is reasonable to suppose that after prices have held this increase of twenty-five per cent for a period of four times as long as they had when selling at the previous high advance of one hundred per cent, that the time has arrived when logically they should fall.

In other words, the theory is that business conditions, as a whole, can continue with "the throttle one-fourth open" about four times as long as with the throttle wide open; or, to word it another way, when conditions are "doubly prosperous," said prosperity can last only one-half the period of time that it would if conditions were only moderately prosperous. This school believes that if the country would be willing to run along at a normal rate of speed so that the line for actual business would correspond with the line of normal growth, we would always have moderately prosperous conditions with a steady, slow advance. On the other hand, the higher that the line for actual business rises above the line of normal growth, the shorter length of time prices will remain high and conditions abnormally prosperous.

The preparation of this Composite Plot of Business Conditions, however, is simply the first step, or the basis, of this most recent and hopeful work relative to forecasting commodity prices. After preparing this Composite Plot, the next step is to plot thereon the average prices of the respective commodities in order to ascertain the relation between the prices of a given commodity and this Composite Plot. This work is now being done by a number of organizations in different parts of the country, and most wonderful results are being obtained. The first work performed was to ascertain the relation of the bond market to the Composite Plot, and it has been found that the lowest money rates and the highest bond prices have come at the very beginning of a prosperity area, as the line for actual business conditions has been crossing the line of normal growth; while the highest money rates and the lowest bond prices have come at the beginning of a depression area, directly after the line for actual business conditions has crossed the line of normal growth. When forecasting the average of thirty-two active stocks by the Composite Plot, it has been found that the high point of the stock market has come when the prosperity area is about one-fifth or one-fourth consumed, and the low point of the stock market has come when the depression area has been about one-fifth or one-fourth consumed.

In the same way the commodity market is now being forecast, and the annexed Composite Plot, above referred to, also contains a line showing the fluctuations in commodity prices since 1902. This line is based on Bradstreet's Index and runs from a minimum point of \$7.75 to a maximum of about \$9.25. Although the work has not continued over a sufficiently long period of time as yet to deduce an actual law, yet the opinion of many students at present is somewhat as follows:

*Prices of commodities are highest when the period of prosperity is approximately two-thirds consumed, and prices of commodities are lowest when the period of depression is about two-thirds consumed—that is, prices reach their high point in the latter part of a prosperity area and continue to decline well into the depression area, when they again begin to advance. When the prosperity area is shallow, prices will continue firm for a much longer period of time than when the prosperity area is high, and vice versa.*

Of course, the annexed plot does not show this conclusively because Bradstreet's Index number includes certain commodities which are subject to weather conditions and which should be eliminated. When these commodities are omitted and a line of general manufactured articles is considered, this law has thus far been found to be true. If future investigations likewise confirm this law, certainly the Composite Plot will be a most wonderful aid to all manufacturers and merchants. Heretofore the business man has either followed one of the two above mentioned "schools of thought" or else guessed, and thus in most cases has found himself mistaken. If the law above mentioned is true, hereafter the business man need simply to watch this Composite Plot each week, noting its development and, by the use of the above mentioned law, know approximately when to expect a turn in commodity prices. If the area develops slowly, he may know that it will be some time before the prices of commodities change, and he may base his commitments in accordance therewith. On the other hand, if the prosperity area develops very rapidly, as was the case in 1909, he may know it will be comparatively short and should plan his business on the assumption that commodity prices will soon decline. Thus, by watching the growth of this area from week to week, manufacturers and



merchants may forecast with wonderful accuracy the probable course of commodity prices.

As suggested, certain products and commodities must be treated independently, and I refer especially to such products as cotton, corn, wheat, and, of course, flour, the price of which is dependent thereon. Although the Composite Plot should be considered even when studying the probable future price movements of these products, yet the most potent factor is the weather. As to the study of the weather conditions, this is a subject by itself and cannot be discussed here. It may, however, be stated that the best reports of weather conditions may be obtained from the government, which work is fully explained in my book entitled "Business Barometers." Men who are interested in wheat, corn, cotton, oats, and such other commodities, as are reported at regular intervals by the Department of Agriculture, should very carefully study these government reports, although, of course, such reports should be supplemented either by personal inspection or by the reports of private correspondents.

There is also another feature which should be mentioned. This is that, although certain subjects like the price of pig iron can of themselves be forecast by studying the Composite Plot, yet it is unwise to consider the price of any one article independently. The safest method is to study the average of a large number of similar commodities. This has been most thoroughly discussed in connection with my writings on forecasting bond prices. When charting on the Composite Plot the price of one issue, this may or may not coincide with the general law; but when combining the prices of a number of bond issues and plotting the average price, the result is almost always in accordance with the law above mentioned. Therefore, with these two partial exceptions, it is believed that a law has now been obtained whereby the average price of commodities may be forecast through the use of this Composite Plot.

Of course, this entire work is in its infancy at the present time. The Composite Plot herewith annexed is simply based on comparatively few subjects while a great many more subjects should be included. It also is a debatable question whether or not the subjects are properly weighted and combined. The location of the line of growth will also always be a source of dispute and is subject to revision. Nevertheless it is becoming universally believed that the fundamental principle underlying the area theory is sound and, as



soon as a Composite Plot can be made truly to represent conditions, prices can be forecast with wonderful accuracy.

As suggested in the first paragraph of this article, I have discussed the subject of "Factors Affecting Prices" under four main headings. First, I discussed prices in general with special reference to the various index numbers now employed; secondly, I discussed the statistical factors and showed mathematically to what the increase and decrease of prices is due; thirdly, I discussed various other general reasons which affect the prices in different localities owing to special causes; and, fourthly, I have discussed how prices are being forecast through the development of the Composite Plot of Business Conditions.

In closing I wish to call the attention of readers to how these various divisions fit together. This most forcibly impresses one by reading, with the Composite Plot in mind, the second section wherein Professor Fisher's formula of exchange is discussed. It will be remembered that  $P$  equals  $M V$  plus  $M'V'$  divided by  $T$  or the volume of trade. When it is considered upon what the Composite Plot is based, it will be seen that said Composite Plot is somewhat of a picture of this important formula of Professor Fisher's. In that same way, if one will read, with the Composite Plot in mind, the quotations in the third section of this article, he will be impressed with their intimate relations, for all of these causes effect the shape of the Composite Plot, while the prices of commodities bear a definite relation to said shape.

In closing, therefore, I urge all readers to give the Composite Plot greater thought and study. We, who are so enthusiastic as to its possibilities, are perfectly willing to grant that at the present time it is in its infancy, and that ten or twenty years hence we will look back with shame upon its present incompleteness. However, the economic principle underlying the area theory is absolutely sound, and if so, should not all of us unite in striving to devise a Composite Plot which will correctly interpret said laws?

Once the nations of the world were dependent upon their armies. The nation which had a Cæsar or a Wellington ruled supreme; later the statesmen ruled, and the nation which had a Pitt or a Bismarck determined the world's policy; but to-day the commercial interests of the nation dictate the world's policy. The credit of our country or of any country during the next ten years does not depend on its

armies or its statesmen, but rather—after character—upon its merchants, manufacturers, bankers and transportation systems. Therefore, as it was once the duty of a nation to see that its young men were trained along military and political lines, is it not our duty to see that our young men are trained to diagnose correctly, and, if possible, forecast business conditions in order safely to guide our great industrial and financial enterprises, upon which the future of our nation is so dependent?

## BOARD OF TRADE OF THE CITY OF CHICAGO

BY GEORGE F. STONE,

Secretary Board of Trade of the City of Chicago.

Commercial organizations are a direct evolution of the primitive methods of bringing buyer and seller together, improving the arrangements by which the surplus products of a people, of a community, or of a region, are distributed to those who are in need of such surplus products. Among the earliest efforts in this direction may be mentioned the fairs of antiquity. The essential characteristics of commerce since that remote period have not changed; they can never change. The demands of commerce for constantly increasing facilities for the rapid and economic exchange of commodities are imperious and resistless. There is no alertness so sensitive and swift as that of commerce; there is no vigilance equal in intensity and constancy to commercial vigilance.

The primary function of boards of trade is to facilitate the marketing of products and merchandise, and to provide facilities for their distribution to the consumer in different sections of the country and in different parts of the world. Boards of trade are not established in the interest of the buyer exclusively, or the seller exclusively, but in the interest of buyer, seller, and producer and consumer alike. They have no private interests to promote; they gather information, statistical and otherwise, for the benefit of all concerned; they are absolutely and emphatically identified with the public welfare. The prosperity of the commercial exchange is and always must be in proportion as it fosters the general prosperity, and as it extends and multiplies commercial transactions upon the basis of maintaining a fair compensation for labor, mental and physical, in the field, shop and market. Its obvious interest is that which attaches to a great public servant summoned to service by the inexorable call of a constant public necessity.

It would be well before entering upon a specific account of the Chicago Board of Trade, or any description or explanation of its functions, to glance at the circumstances surrounding its birth, in order that we may understand somewhat, at least, of the conditions which brought it into existence. It was born in a time pregnant

with great and significant events, and in a region abounding in unexampled potentialities. In "Schoolcraft's Travels," published in 1823, Chicago is described as a village in Pike county, Illinois, situated on Lake Michigan, at the mouth of Chicago Creek. "It contains twelve or fifteen houses, and about sixty or seventy inhabitants. To the ordinary advantages of an agricultural town it must hereafter add that of a depot for the inland commerce between the northern and southern sections of the Union, and a great thoroughfare for strangers, merchants and travelers." How quick the insight, how profound the mercantile instinct, and how wide the horizon of the representatives of those sixty or seventy inhabitants, the history of Chicago up to this hour bears eloquent witness. An uncommercial and superficial view of this village, surrounded by hostile Indians and set in a quagmire, led Captain Neil, the commandant of Fort Dearborn, in 1823, to write to the Secretary of War, in the same year, as follows: "The undersigned respectfully recommends that this fort be abandoned, as the character of the surrounding soil is such as to preclude the possibility of ever supporting a population that would justify the expense of maintaining the fort."

In this little town, destined to become within a comparatively short time the metropolis of the West, were gathered a small number of merchants who, with a far-seeing and positively audacious sagacity, planned not only for a city, but for an empire in this wonderful valley of the Mississippi, whose prosperity, under the inspiration of a government created and administered by the people, would astonish the world. The social, political and educational institutions of the people who were to inhabit this imperial territory were fixed by that celebrated instrument framed for the "Government of the Territory Northwest of the River Ohio," which has passed into history as the "Ordinance of 1787." This, the most notable instance of legislation that ever was enacted by the representatives of the American people, declared that "religion, morality and knowledge, being necessary to good government and the happiness of mankind, schools and the means of education shall forever be encouraged, and that no person demeaning himself in a peaceable and orderly manner shall ever be molested on account of his mode of worship or religious sentiments in the said territory." It also declared, "that no law ought to be made, or have form in the said territory, that shall in any manner whatever interfere with or affect

private contracts or engagements *bona fide* and without fraud, previously formed." This last provision was the first embodiment in written constitutional law recognizing and maintaining the obligations of contracts. Six weeks after the passage of the ordinance, it was incorporated in the draft of the Constitution of the United States. This ordinance has well been described as a pillar of cloud by day and of fire by night in the settlement and government of the Northwestern states.

#### *Early History of the Board*

The first steps toward the organization of the Chicago Board of Trade were taken on the 13th of March, 1848. At the beginning of that year Chicago had neither railroads nor canals, nor any other means of communication with the surrounding country than by wheeled vehicles, and small craft on Lake Michigan. For a number of years preceding, a few enterprising men, under the leadership of Mr. Thomas Richmond and Mr. Wm. L. Whiting—who were engaged in the grain business—were desirous to have a Merchants' Exchange established in Chicago similar to those exchanges in the older and larger cities of the East. Even at that early date the inhabitants of Chicago took great pride in their city, and had an unbounded faith in its possibilities. A call was at once issued for a meeting of the business men of the city for the formation of a board of trade.

Its beginnings were merely initiatory, having in view the development of this part of the country as forecast by the determined men who established this great commercial organization. At that time a constitution was adopted and a committee appointed to prepare by-laws, rules, regulations, etc. At a second meeting on the first Monday in April following, the report of the committee was adopted, and a general invitation was extended to merchants to meet daily at their rooms, that were rented for \$110 per annum. Thomas Dyer was elected the first president of the board, Charles Walker, first vice-president, and John P. Chapin, second vice-president. It now became in a pronounced sense the headquarters of the people, not only commercially but in all matters affecting the public good. It was the one great rallying point in this western region on occasions when vital questions were discussed, and the common welfare considered.

Interesting and varied were the vicissitudes through which the board passed, which we have not space here to recount; those that were for a brief time disheartening were overcome. The determination of the merchants in this struggling yet growing and aspiring town, to found here a great metropolis and foster an enthusiastic public spirit, never for an instant faltered, and their vision of Chicago's greatness throughout that pioneer and formative period was always undimmed. We are obliged to pass over in this article, the intensely interesting record of several years. In April, 1861, the thirteenth annual meeting of the board was held in its room on South Water street. Stephen Clary was president, Clinton Briggs, first vice-president, E. G. Wolcott, second vice-president, and Seth Catlin, secretary. The roll call contained the names of 725 members. It was created a body politic and corporate, under the name and style of the "Board of Trade of the City of Chicago," by the General Assembly of the State of Illinois on the seventh day of March, A.D. 1859.

#### *The Objects of the Association*

The objects of the association as set forth by its high-minded and sagacious founders, are:

To maintain a commercial exchange; to promote uniformity in the customs and usages of merchants; to inculcate principles of justice and equity in trade; to facilitate the speedy adjustment of business disputes; to acquire and to disseminate valuable commercial and economic information; and, generally to secure to its members the benefit of co-operation in the furtherance of their legitimate pursuits.

Where, in all mercantile annals, can be found a more compact and excellent declaration of principles and practice in the conduct of business, and in the promotion of commerce in its broadest and most lofty conception? After an experience of more than half a century it is impossible to change it without marring it. By an unswerving adherence to these declarations and directions, the board will commend itself more and more to the market places of the world; to all state legislatures; to the public; and to the Congress of the United States. This exchange derives its importance and its sustaining power chiefly from the grain crops of the United States, and from the immense number of animals, comprising hogs, sheep,



cattle, horses, mules and milch cows, raised on the farms of this resourceful country.

The importance of the Board of Trade of the City of Chicago became more and more apparent as the commodities and products of the West multiplied, as the years went on. To indicate the growth of the business connected with the Chicago Board of Trade, and also the development of the immense territory tributary to Chicago, I would state that the quantity of flour shipped from Chicago in 1848 aggregated 45,200 barrels; in 1910, 7,038,351 barrels. The quantity of wheat shipped in 1848 aggregated 2,160,000 bushels; in 1910, 18,679,100 bushels. The quantity of corn shipped in 1848 was 550,460 bushels; in 1910, 78,623,100 bushels; the quantity received, 102,592,850 bushels. Within the same period of time the shipment of oats increased from 65,280 bushels to 77,890,100 bushels. The receipts of oats during the year 1910, aggregated 101,859,000 bushels. The receipts of wheat, and of flour in its wheat equivalent, of corn, oats, rye and barley, during the year 1910, aggregated 294,858,724 bushels. The shipment of pork in 1853 aggregated about 18,000,000 pounds. Like shipments in 1910, about 600,000,000 pounds. The shipments of lard in 1853 aggregated 1,847,852 pounds; the quantity shipped in 1910 aggregated 268,702,900 pounds. As indicating the growth of the trade in cattle and hogs, Chicago received in 1865, 339,000 head of cattle, and 750,000 head of hogs. In 1910, the receipts of cattle aggregated 3,052,958 head, and the receipts of hogs, 5,926,315 head. Total receipts of live stock, comprising cattle, calves, hogs, sheep and horses, at Chicago, during the year 1910, aggregated 14,452,490 head, valued at \$357,145,681; and from 1866 to 1910, inclusive, 462,984,309 head, valued at \$8,582,329,245. Prior to the year 1853, we possess no record exhibiting the volume of trade in pork, lard, butter or wool, but the increase in the actual transactions in these products is something marvelous.

The statistical information comprised in the annual reports of the Chicago Board of Trade, not only relate directly to the trade of Chicago in grain, provisions, live stock, hay, flour, lumber, cured meats, dressed beef, butter, cheese, hides, grass seeds, etc., but also has reference to such commodities in other principal markets, both domestic and foreign. This varied official information essential to a comprehensive understanding of the scope and importance of

the business transacted and fostered under the rules of this association, is daily and hourly, and in many instances, instantaneously at the service of the members of the board to guide them to an intelligent conduct of their business, and to enable them to fully provide the producer with this great range of information, designed to aid him in intelligently marketing his products, and in instructing his commission merchant as to the conduct of consignments made to that commission merchant. Telegraphic facilities are also provided for unhindered and prompt communication with shippers, with customers, with purchasers and with consumers. Representatives of the press have constant, unhindered access to all this information in order that the public may be kept fully informed regarding values, and the general movement of merchandise dealt in by members of the board.

No commercial or financial annual statement can be a complete, and an intelligent one, without an official knowledge of the volume and farm value of the chief agricultural crops which constitute the basis of the nation's prosperity. Much minute care is bestowed upon these compilations. Their relation to our financial and commercial affairs is an intimate and a vital one. They disclose the source of our national wealth; the energy, enterprise and character of our farming population. They set forth not only the inducements which our western states present for the investment of capital, but inducements to the worthy and ambitious to make their homes where Nature lavishes her rewards upon those who with honest and industrious effort seek her favors.

The full significance of this showing no one can fully comprehend, save the careful and observant student of political economy. It is being realized as never before, that the farmer is the true wealth-producer; the fruits of his toil sustain our commercial and industrial life, and in a far-reaching and profound sense furnish the vitalizing forces of our national progress.

The volume and value of the chief grain crops of the West fix rates of interest, determine to a large extent rates of transportation and the volume of interstate commerce; they measure the extent of credits given by merchants and bankers, and place a proper value on all kinds of collaterals; in fact, directly and indirectly, the crops of the Mississippi Valley affect every financial and industrial interest from one end of the land to the other. In this constant and vital

relationship the Chicago Board of Trade occupies a pre-eminent position. The Chicago Board of Trade is the grain and provision clearing house of the world. It stands between the producer on the one hand, and the consumer throughout the civilized world, on the other. Behind the multiplicity of its transactions are not only our own chief grain crops, but those of other surplus grain producing countries. On the bulletin of this exchange is posted the price of wheat, maize, oats, provisions, etc., in every considerable market throughout the world. This information with absolutely no restriction, and free of cost to the public, is sent broadcast for the benefit of producer, consumer, buyer and seller alike, without prejudice and without partiality.

No other department of business conducted so openly, so absolutely above board, and so directly with reference to the common welfare. No department of business is so free from restraint of trade. It has no monopolistic feature whatever, and permits the unhindered and healthful play of the forces of competition. It has no credit system. Cash attends the consummation of every trade, and in the event of sales for delivery at a future time, our rules provide that ample security may be obtained to protect the buyer or seller as the case may be. The breadth and activity of our market give to registered warehouse receipts, protected by law, a convertible and instantaneous value as collateral security. This system with all its safeguards, besides providing an economical and safe marketing of the products of the farm, primarily for the benefit of the producer, safely employs an enormous amount of funds seeking investment by our great moneyed institutions. Call loans made on these warehouse receipts, fortified by the state statutes, and recognized by the rules of this board, are most desirable, and are so regarded by our national banks. No business is more legitimate; no business is more conservative; no business is more vitally allied to the varied industries and commerce of our city; no business is more imbedded in honor, or intrenched in the soundness of a contract than the business conducted under the rules of this organization. No contract, either written or oral, is more binding than the contracts to which a member of this association is a party. No informality, no absence of legal technicalities, will avail under our rules to absolve a member from an undeviating compliance with every term and every feature of his business obligation. Every

pretext for the avoidance of such obligation is brushed aside by a jury, not of a court, but of business men—his peers—and is not permitted to obscure the spirit and intent of his promises, or to release him from his proper responsibility as a man and as a merchant.

### *Buying and Selling for Future Delivery*

There seems to be a general and widespread disposition to criticise business methods throughout the realm of financial and commercial activity. I by no means deprecate such criticism. I rejoice in all that has been done in the purification of corporations, and for insistence upon individual integrity, and lofty and loyal citizenship among all classes. No man shall be exempt from the consequences of wrong-doing; and those who are charged with great responsibilities and are in positions of trust, and who in a special sense enjoy public confidence, are held and must be held to strictest accountability. The laws which are made for the public welfare and to which individual liberty must always be subordinated, must be obeyed; the very least must feel their care, while the greatest should not be exempt from their power.

The system of buying and selling for future delivery, as applied especially to grain, and as practiced upon and safeguarded by the rules of the grain exchanges located in our great primary markets, is much discussed, and there is more or less misunderstanding regarding the same. This system was devised solely in the interest of the farmer and interior grain buyer. It is not a scheme that in any sense was forced upon the country; it was framed in response to the urgent demand of the farmer, merchant and banker throughout the Mississippi Valley; it provides for the economical marketing of the chief grain crops of the West; it creates and maintains a broad, active and constant market for the sale of grain and provisions, independent of an immediate, actual, existing, consumptive demand; it was an evolution, and grew naturally, gradually and inevitably out of the pressing necessities arising from the rapid growth of a vast fertile area, whose teeming products awaited facilities for ready and constant sale, at prices just to seller and buyer, to producer and consumer alike; and without any unfair advantage to either the capitalist or merchant on the

one hand, or the farmer or country dealer on the other; it provides for the constant conversion into cash, at fair prices, of an enormous yield, chiefly comprising grain and hog products, regardless of the volume offered. It provides the agriculturist with ready money, which in turn finds its way through the country stores to wholesale merchants in great centers of trade, and, more than any other measure, keeps the complicated machinery of business in harmonious activity. This ready money circulates without interruption through the arteries of our far-reaching commercial and industrial life, sustaining, in a large degree, our wholesale trade in all departments of business.

This system brings to the knowledge of the grain dealer and farmer all facts which are necessary for them to know, in order to arrive at the intrinsic value of their grain, as measured by the supply, and the whole supply, the demand, and the whole demand, the world over and the year through. At the time of harvest when receipts are inevitably larger than the consumptive or ordinary demand, without this system the seller would be at the mercy of the capitalistic buyer. This is too manifest to require argument. The system for buying and selling for future delivery steps in at this juncture, and says to the monopolist and capitalist, keep your hands off; you shall not take advantage to the detriment of the producer, of exceptional conditions. By means of this system, the supply in excess of the existing consumptive demand is carried forward until wanted by the consumer, and consequently, is rescued from the domination of abnormal and temporary market influences. Under its operation, all information concerning the movement of grain, and of the markets of the world, is placed without discrimination at the service of the public. It is in the interest of the general prosperity, and of the common commercial welfare. It is an absolute economic necessity.

In the administration of this system, boards of trade stand for equity, and gather for both buyer and seller that great fund of official information from all quarters of the world, without which unstable prices and violent fluctuations would seriously and perhaps disastrously disturb widespread and salutary conditions. Under its operation the prospective demand is brought to the farmer's door as a present and an actual one; likewise the prospective supply is brought into the market as a present factor, which, with the pros-



pective demand, fixes the proper and intrinsic values of the chief grain crops. All this information reflects the judgment upon the business outlook of the great merchants of the world, whose manifold and important interests compel them to a studious consideration of the world's food supply and of the world's food requirements.

The only option feature in the system is the right to deliver at any time during the month for which the sale was made, the obligation all the while existing to deliver the actual property sold during the month when it was agreed to make the delivery of such property.

A feature of this business, which is an important one in this discussion, as it bears upon a criticism frequently heard, is that the aggregate sales of grain per annum, for instance in the Chicago market, are largely in excess of the volume of the annual receipts. To explain: In all the great grain producing states from Minnesota on the north to Kansas, and indeed to the Gulf, are located a large number of elevators in which are stored thousands, and hundreds of thousands, of bushels of grain "hedged" in Chicago; that is, sold for delivery during a future month, at a price that affords the merchant a reasonable profit. Some of that grain is shipped to Chicago in the fulfillment of sales, but much of it is sent elsewhere as the demand and the condition of markets may bring such a disposition about. For instance, grain in Kansas may be shipped on a sale to Newport News, or Baltimore, or Philadelphia, or New Orleans; that grain being all the time sold in the Chicago market for future delivery, is bought in on that market as fast as sold and shipped elsewhere, in order to keep the accounts square and to insure against loss, and to have the sale for future delivery correspond in volume to the aggregate quantity of grain on hand and not sold.

Again, the European buyer, or importer, purchases enormous quantities of grain in American markets. He wishes to avoid all risks, and to keep himself protected against loss on those purchases between the time of such purchases and the time of their arrival at port of destination; therefore, he sells a corresponding quantity on the Chicago market for delivery during a future month, at relatively the same prices which he paid for the grain. When the European importer receives his grain if the market has declined he makes on his sale in Chicago from the same volume of grain purchased, what



he lost on his shipment at the time of the arrival of that shipment at destination. If, on the other hand, he loses by the advance in the market on his Chicago short sale, he makes up that loss in the corresponding advance realized on his shipments at port of arrival.

We might multiply these instances indefinitely. It may, however, be easily perceived how extensive, how far-reaching such transactions are; and moreover, that they are of a perfectly legitimate and conservative character, and of incalculable value to the agriculturist, merchant and banker.

To illustrate once more: A miller in Glasgow purchased 100,000 bushels of wheat in San Francisco. Glasgow is a four or five months' voyage from San Francisco. The miller does not wish to assume any risk in the transaction; he is content with the ordinary, reasonable millers' profit, consequently he sells 100,000 bushels in the Chicago market, that being the great central grain market of the world, at relatively the same price which he paid for his grain in San Francisco. When the grain arrives at Glasgow, if the market has declined, he makes a profit on his sale in Chicago equal to that decline; if, on the other hand, the market has advanced, he makes on his shipment at the time it arrives in Glasgow, the amount of the loss which he sustains on his short sale in the Chicago market.

Again, the miller in this country "hedges" his purchase in a great central market, protects himself absolutely against loss, and is assured of a reasonable milling profit on his flour. By this means he avoids speculation, uncertainty and risk. When he makes a sale of his product, he buys in its equivalent in wheat of the quantity embraced in his original short sale, and is always enabled to sell his flour at the current market price and at a reasonable profit; thus he pursues the even tenor of his way.

I need not dwell in detail upon the important and vital relation which this system sustains to the miller, merchant and banker, and to the great lines of transportation, both by water and by rail.

The Supreme Court of the United States in an opinion delivered by Mr. Justice Holmes, says: "When the Chicago Board of Trade was incorporated, we cannot doubt that it was expected to afford a market for future as well as present sales, with the necessary incidents of such a market, and while the State of Illinois allows that charter to stand, we cannot believe that the pits merely as places where future sales are made, are forbidden by the law.

"Of course, in a modern market contracts are not confined to sales for immediate delivery. People will endeavor to forecast the future and to make agreements according to their prophecy. Speculation of this kind by competent men is the self-adjustment of society to the probable. Its value is well-known as a means of avoiding or mitigating catastrophes, equalizing prices and providing for periods of want. It is true that the success of the strong induces imitation by the weak, and that incompetent persons bring themselves to ruin by undertaking to speculate in their turn. But legislatures and courts generally have recognized that the natural evolutions of a complex society are to be touched only with a very cautious hand, and that such coarse attempts at a remedy for the waste incident to every social function as a simple prohibition and laws to stop its being are harmful and vain."

Judge McPherson, of the United States Circuit Court, says: "The law of contract, the right of contract, is one of the greatest rights that we have in this country. It is a great constitutional right, and the words referred to in our constitution, where we are all given the right of liberty, do not mean, simply keeping out of jail. Another kind of liberty is just as sacred as keeping out of jail, and that is the liberty to make contracts just as we please. I have the right to make any kind of contract with you men, about anything, with such exceptions as are for the public good. No man has the right to make a law that I shall not purchase real estate or buy wheat; not only that, but I have the right to make contracts for future transactions and just as legitimately as contracts for immediate execution. You can see that we could not do business in this country if we were limited to making contracts for immediate consumption. I have a perfect right to go out into the country and buy hogs, grain or cattle, to be delivered to me next week or next month or next year, and that is a valid contract and a right that can never be taken away from me.

"It is just as legitimate to make a contract for the future delivery of grain, buying or selling, as it is to get it at once. I suppose the largest part of the grain contracted for in Iowa by grain dealers, is to be delivered some time in the future to cattle feeders; they want it the next month or the next spring, at a stipulated price.

"There are thousands of transactions in grain and live stock

where the sellers do not have the grain or stock; they expect to go into the market and buy it."

### *Speculation*

Hon. Emery A. Storrs says: "That there are speculative operations in grain and provisions, no one will undertake to deny, but so long as the nature of man remains what it is, and what it always has been, enterprises more or less speculative will characterize the commerce and trade of the world. It occurred many years ago to Lord Kenyon, who was a great man within a certain judicial range, that he could regulate by judicial decision the currents of trade. He conceived that buying grain and breadstuffs, and holding them for a rise for speculative purposes, was against public policy, and immoral, and he, therefore, as Chief Justice of the King's Bench, adjudged all such transactions void. But the King's Bench, with all its judicial terrors, might as well have undertaken to change the course of seasons as to have checked enterprises of a speculative character in breadstuffs, and such a clamor was raised about the ears of Lord Chief Justice Kenyon, that it was not long before his decisions were relegated to the limbo of overruled cases, and are quoted to-day, not as authority, but as demonstrating how far and how absurdly wrong even a great judge may possibly go."

The prejudice against buying and selling grain is of an exceedingly ancient origin; so violent and ridiculous was that prejudice, that having corn with intent to sell it again in the same market, was forbidden by law. By the statutes 5 and 6, Edward VI, it was enacted that, "Whosoever shall buy corn or grain with intent to sell it again shall be reputed an unlawful engrosser and shall, for the first fault, suffer two months' imprisonment, and forfeit the value of the corn; for the second, suffer six months' imprisonment and forfeit double the value; and for the third, be set in the pillory and suffer imprisonment during the King's pleasure and forfeit all his goods and chattels." In the year 1800 an individual by the name of Rusby, was indicted at common law, and convicted of the imaginary crime of regrating; that is, selling a quantity of corn in the same market in which he had purchased it at an advance of two shillings a quarter.

That the agencies and facilities afforded by the great grain

exchanges of the country are, in exceptional instances, misunderstood and used for illegitimate business, is not denied, any more than is doubted that they promote the general prosperity and are indispensable to the development of the country. A perversion of privilege attends all institutions and professions, and can not be wholly eradicated by laws and regulations; it must be destroyed by the cultivation of lofty mercantile principles, and by their widespread recognition. Happily, such principles are becoming more and more prevalent. While it is true that traders in all departments of business indulge in speculation to an extent not warranted by their financial strength, it is too late, in view of what has been accomplished, to condemn speculation, in its proper sense, as an element in mercantile life. It has uncovered resources; it has stimulated a laudable enterprise; it has created values; it has quickened industry; conserved individual capacities; promoted intelligence; awakened ambition; augmented the comforts of life. It is aggressive, courageous, intelligent, and belongs to the strongest and ablest of the race; it grapples undismayed with possibilities; it founded Chicago; it rebuilt a great city upon smouldering ruins, and impels it in the march of progress. Whenever this kind of speculation is denounced, it is misunderstood, and it is often decried by those who unconsciously share its benefactions.

An investment of money made upon a blind chance is wholly pernicious, and defies every principle of mercantile honor, as well as the laws of the land. Frowning upon such methods and motives, this board is opposed to illegitimate business in every form, and is especially emphatic and pronounced in its rules and proceedings, against engaging in transactions where the delivering and receiving of merchandise are not absolutely and unconditionally required.

#### *Bucket-Shops*

A bucket-shop is a pretense; it pretends to transact business, when, in fact, it exercises no commercial function and is devoid of every commercial feature. It is a deliberately premeditated, organized fraud. It charges for its service when no service is performed. It merely weaves its web and watches for its victims; it is a gambling contrivance pure and simple. It is thoroughly demoralizing to industrial and mercantile life. It pollutes everything it touches and taints everybody with whom it is in any manner identified. It is insidiously pernicious and undermining, and is at war

with every legitimate industry and every principle of mercantile life. It is a scheme for betting upon quotations under the flimsy guise of commercial transactions.

A bucket-shop takes one side of the bet and its customer the other side. If the customer wins, the bucket-shop must lose. If the bucket-shop makes money, it must follow that the customers lose money. To put it in another way, it is for the interest of the bucket-shop proprietor that his customers lose money. It is for the interest of legitimate merchants that their customers make money. The profits of the bucket-shop are derived from the losses of their infatuated customers. The impoverishment of their customers means the wealth of the bucket-shop; and yet, strange to say, knowing this, their patrons eagerly enter the unequal contest.

The bucket-shop bears the same relations to legitimate commercial bodies that a counterfeit bears to a genuine United States note. The bucket-shop is an unmixed evil. Any transaction entered into by any member of this board which contains either directly or indirectly any "bucket-shop" feature, or even a suggestion of dealing in differences in the fluctuations in the market price of any commodity, or corporate stock, without a *bona fide* purchase or sale of the article for an actual delivery, is imperatively and expressly prohibited.

#### *Short-Selling*

Experience corroborates and emphasizes the doctrine laid down by John Stuart Mill, viz.:

"When speculation in a commodity proves profitable, it is because in the interval between buying and re-selling the price rises from some cause independent of the speculators, their only connection with it consisting in having foreseen it." The converse of this is also true, that when speculation in a commodity proves profitable to the short seller, it is because in the interval between selling for delivery at a future time, and buying in order to make that delivery, the price declines from some cause independent of the speculators, their only connection with that decline consisting in having foreseen it, and in having exercised a sagacity, intelligence and courage with reference to it not exercised by the majority of their fellows. Speculators do not in any sense hold in abeyance the governing law of supply and demand, much less annul it. The law is irresistible



and if they are not conforming to its mandates, they must succumb and pay the penalty.

No man, no edict of a tribunal, legislative or judicial, can prevent one man from stipulating with another to deliver a bushel of wheat, a pound of sugar, a bag of gold, or any other article, at an agreed price, upon a certain date, or during a specified month; nor can any power exempt a seller from liability for the non-fulfillment of the terms of any such stipulation. The right to make such a contract is an inalienable one. A man possesses the right to agree to deliver any property at such time and price as may be agreed upon, whether at the time of making such agreement he is in possession of the property or not, and whether or not he has bought such property under the same terms which attach to his own sale of such property; that property may be wheat, a house, an engine, a railway car, a government building, or any other kind of property. The buyer and seller must not be interfered with except when the seller refuses to deliver, or the buyer refuses to pay, according to the terms of the contract. Under no other conditions than these can they be interfered with. Into the domain of individual and commercial constitutional rights, restrictive law shall not enter.

Professor Emery, of Yale, says: "It should hardly be necessary to prove that 'short-selling' is an entirely honorable and absolutely necessary practice. It is strange, however, that even in fairly intelligent publications we should so frequently see the statement that 'it is wrong to sell something which the seller does not own.' As a matter of fact, this is a most common practice in all lines of business. The manufacturer sells goods before he has produced them, the builder contracts to deliver a house at a certain date which he not only does not possess, but for which he has not even bought the raw materials or hired the labor. The clergyman contracts to deliver the sermon for a price, although the sermon has not been written. If contracts for future delivery were to be limited in all cases to delivery of things already in possession of the contracting party, business would be hampered in a thousand different ways. There is absolutely no reason why a wheat dealer or a flour dealer should not make a contract for the delivery of his commodity three months from date, knowing perfectly well that he can fulfill the contract by securing the necessary article. To call this ethically wrong is simply ridiculous."



Point me to any institution or department of business that more zealously and honorably promotes the common commercial and industrial welfare than does the Chicago Board of Trade. The part which boards of trade play in the process of universal enlightenment is profoundly impressive, and their effect upon the development of this country and in sustaining its industries was never more apparent than at this time. Boards of trade marshal the forces of individual capacity, the resources of the field, and of the mine; they call forth for the common good the latent forces of mind and of matter, and are constantly creating facilities for the saving of time, for reducing expenses in the distribution of merchandise, and minimizing risks of business transactions. They study and solve the problems which a keen and educated competition presents. They take a wide outlook in carrying out their purposes, and keep in view not one market, nor one state, nor one country, but plan and legislate for a world-wide commerce.

The record of this organization for more than sixty years is completed, and within its pages may be found facts presenting contrasts more startling than are found in tales of romance. No prophet flourishing during the period of its formation and early history would have ventured to predict the marvelous development which the statistics published in the annual reports of the Chicago Board of Trade disclose, and no imagination of to-day can compass the magnitude of the record as it shall be made up even a generation hence.

## THE NEW YORK PRODUCE EXCHANGE

BY E. R. CARHART,  
President of the New York Produce Exchange.

A history of the New York Produce Exchange as a chapter in an economic study of the produce markets of the country involves far more than the mere story of an individual trade organization. In connection with its legitimate ancestry it may be noted that it is easily the oldest commercial institution on the American continent; its history is wrapped up in the history of the agricultural trade of New York, having its beginnings away back in the days of Dutch occupation, when trading in wheat by cargoes at a price per bushel was inaugurated. In such a paper as this, however, which must necessarily be brief, and which has to do in the main with the exchange as an exchange, we must content ourselves with only a very general statement so far as trade history is concerned.

In 1626 the *Arms of Amsterdam* carried the news to Holland that Peter Minuet, as director-general of New Netherland, had made formal purchase of the island for sixty guilders, or about twenty-four dollars of our currency. She carried a cargo of eight thousand beaver and other skins, as well as oak and hickory timbers. It is also a matter of record that in 1643, three large vessels arrived at New Amsterdam from the West Indies to take on cargoes of wheat, and thus began the commerce of America, illustrating in its beginning the general characteristics of its after history, and also the rapidity with which the fruit of the field followed and displaced the spoil of the forest. From the day when trade was an ever-unfolding romance down to the present when trade has become a fixed science, New York has been the gateway of American commerce. Her natural advantages gave her easy ascendancy over all her competitors, and it is interesting to note the part these advantages have played in the development, not only of the trade of New York, but of the commerce of the country itself and the history of the nation as well. Its magnificent harbor, capable of sheltering the commerce of a continent, has of course always been

the chief factor in the development of the trade of New York. It not only allured to its shores the trade of the outside world, but it enabled the little colony to utilize its other natural advantages at a time when those advantages meant much more than they now do. Its great harbor, together with its situation at the entrance to Long Island Sound, gave it an entry to the most fertile and easily developed part of New England; its location at the mouth of a navigable river penetrating one hundred and fifty miles into the interior, offering at several places in its course easy access to the cross-country and having at its head a rich country easily cleared and developed, opened a pass at almost tide level clear across the state to the Great Lakes and so on to the Far West; all these advantages made New York the natural center for the immense volume of trade which early began to flow back to it through these channels.

In 1678 Governor Andros reports that "Our produce is land provisions of all sorts, as of wheate exported yearly about 60,000 bushels, pease, beefe, pork, and some fish, tobacco, etc."

In 1774, according to Governor Tryon, the exports to Great Britain amounted to 160,000 pounds sterling, and consisted of "wheat, Indian corn, oats, rye, peas, barley, buckwheat, live-stock, timber and lumber, flour, pork, beef, etc."

These reports indicate exactly the character of New York's early trade, and were the story continued in detail year by year, it would simply be told in the same terms but in larger figures, until the day when the products of mine and factory were added to those of forest and farm.

Confining our study entirely to the agricultural trade of New York, we find that New York soon had added to her natural advantages other advantages almost as powerful in their determining influence on the trade of the country in favor of the metropolis. We need mention but two of these: First, New York became the financial center of the country; she had control of resources that enabled her to make immediate advances on all produce seeking its ultimate market through her. And, second, the completion in 1825 of the Erie Canal.

Soon after the canal was completed and in actual use there began that great demand for American foodstuffs which resulted in the development of extensive milling interests, the building up

of a fast clipper service between New York and Europe, and all the wonders that accompanied the growth and development of American agriculture.

Looking at trade history from the standpoint of the produce markets of the country, there began at this time a period of uninterrupted progress and development lasting for over fifty years. It was a period of intense activity, of almost superhuman endeavor, of colossal enterprise, and of constant adjustment and readjustment to the needs of enlarging trade; and during the whole period New York proudly maintained her supremacy. She was aided in this by the advantages already referred to. The open line of communication through her port with every part of the world, and her ability to finance the movement of the crops of the country, gave her easy ascendancy in the grain trade, and made her master of the flour and provision trades.

The provision trade illustrates the situation. There were scattered all through the West packing houses whose operations were confined mainly to the "packing season" beginning November 1st and ending March 1st, during which period all products had to be put down in cure in order to be "regular" for delivery. These houses depended upon the surrounding territory for their supply of live-stock and constituted the natural market for that live-stock. The result of their operations was the accumulation by the end of the "packing season" of practically the full supply of pork, beef and lard for the year. This product gradually found its way to the markets, and New York obtained the principal share. Great quantities were shipped in and stored in the great provision inspection yards of New York conducted under rules of the New York Produce Exchange, where it remained until started on its final journey to the consumer. Some of this product was shipped in for delivery on sales made in advance of its packing, which fact made its packing possible; and some of it on consignment for storage, in order that it might be where it could be well cared for and easily financed, and where quick advantage could be taken of favorable market conditions. It all formed the basis of the trading on the exchange. The period, as a whole, developed the produce exchanges of the country as we now have them, and before its close they had become what they have always remained—the great clearing-houses of commerce.

In the eighties, however, the commerce of New York began to feel the effect of the great economic and industrial changes that were taking place throughout the country. These changes revolutionized trade everywhere, and in no place more than in New York. The advent of steam on the ocean; the extension of railroads on the land; improved financial conditions and facilities throughout the country; refrigeration and the introduction of the refrigerator car; the use of the telephone; the growth of the great milling and packing-house corporations, with their immense capital, splendid organization and extensive sales and distributive departments—all contributed toward the revolution in trade methods, and resulted in opening up many new channels for the steadily enlarging trade of the country.

The exchanges of the country, as trade centers, were materially affected by the new order of things. Some of the changes were fundamental, and affected them all alike, while others affected them favorably or unfavorably according to their location and to the nature of the business transacted on their floors. To New York it all meant an active fight to hold the trade that formerly came to her without an effort on her part. Other ports began actively to compete for a share of her export trade. Western states began to assert themselves as trading centers. Canada became a formidable competitor. And, to cap it all, the railroads, pushed to the limit of their capacity by the enormous export trade of New York and by the demands of her constantly enlarging local business, sought to divert some of her heavy export traffic by establishing differential rates against her in favor of other cities where it could be handled at less expense to themselves, and with less interference with high-class freights. The result has been that while New York still remains the great center of international trade, she has not made the relative trade gains that other ports have in those articles named by Governor Tryon in 1774. Nor is this all. In some articles, principally those in which the products of the farm have been processed or manufactured, such as flour and provisions, New York has lost her importance as a trading center, having become to a large degree a point of transfer on through shipments. She has thus held her traffic, but has lost her trade. On the other hand, her own home trade has increased enormously. Looking at the magnificent city of to-day, with its millions of people whose needs

form the basis of a trade so vast as to make it the object of rivalry on the part of the nations of the earth, it is difficult to realize that less than seventy years ago a ship sailing from its port for Liverpool with a cargo of ten thousand barrels of flour marked an epoch in the history of American trade. New York City's consumption of flour now amounts in one day to more than that whole cargo, while the metropolitan community, of which the city proper is only a part, consumes each day almost two such cargoes. For the year ending June 30, 1911, the total exports of flour from the port of New York, reduced to barrels, amounted to 3,446,616 barrels. It is estimated that New York City proper consumed over 4,000,000 barrels in the same period of time. For the same year the total exports of flour from all Atlantic ports amounted to 7,400,282 barrels. According to estimates, what is known as the metropolitan district consumed nearly, if not quite, 7,000,000 barrels. These figures will give some idea of what New York's own trade means to its mercantile community.

As another offset against the losses mentioned, new trades and interests are constantly developing throughout the country, and when they reach a state of importance they seek a place on the exchanges. The chief example we have of this in New York is the cotton seed oil trade. The production of cotton seed oil for the year 1910 amounted to 167,970,000 gallons. New York has become the primary market of the cotton seed oil industry, and prices of cotton seed oil everywhere are based upon the quotations resulting from trading therein on the floor of her exchange.

This brief outline of trade history will give some slight conception of the general conditions out of which the New York Produce Exchange sprung into existence, and under which it has maintained itself and carried on its work. It really constitutes an outlined history of the exchange itself—aside, of course, from its organizational life.

Exchanges such as the New York Produce Exchange are merely organized trade. They are not organized for the purpose of making money. They, as institutions, have nothing to do with the making of prices of commodities dealt in on their floors. They are simply organized market-places. By gathering the latest information of trade interest, they simply enable their members to come to a quick decision as to what prices ought to be, and, by



disseminating that information abroad, perform a like service for the general public. The result is that their quotations, which are simply a record of trades made, represent the average opinion of all those interested in a given article as to what the value of that article really is at the time the trade is made. They do not control trade. They regulate it, being trade's own self-imposed check upon itself, in order to prevent congestion and chaos. Such exchanges are never organized in any community in advance of the coming of trade, for the purpose of developing trade. They are the outcome of trade itself, and trade conditions write their history. This all holds good of the New York Produce Exchange. Descended from a long line of market-places, a trade ancestry of two hundred and fifty years is proudly claimed for it. The record of direct succession is not perfect, and might easily be disputed, but from the standpoint of the efforts of trade to meet changing conditions with facilities for the care of new needs thus created, the claim is fully substantiated.

The first depot, or market-place, in New Amsterdam was located in the "Company's Stores." These stores were erected in the early days of the colony, and occupied a part of the site of the present produce exchange building. They stood facing Fort Amsterdam, with an open space about one hundred feet wide between. This space ran about parallel with Whitehall Street, and was used as a public market field or place. From it the little alley known as Marketfield Street, closed in part by the erection of the produce exchange building, took its name.

In 1658 a market-place was built in front of the fort, on the present site of Bowling Green, in front of the present exchange. This was known as the "Broadway Shambles," and was used as a market-place until 1707, when it was removed—only to be restored again, however, in 1720, when it was ordered that "The old market-place in the Broadway be and is hereby held as a public market-place until further notice."

In 1656, at the "Strand," on the site of the old building of the produce exchange, on the east side of Pearl Street, between Moore and Whitehall Streets, then the water front, a market was established. For it, in 1675, the High Court of Assize ordered that a "fitt house be built." This market was known as the "Custom House Bridge" market. It did not have a very long life, for in

May, 1684, it moved to the market-field at Bowling Green. Two hundred years later, almost to a day, in May, 1884, the New York Produce Exchange made the same move, leaving its old building on the site of the Custom House Bridge market for its new building on the site of the old market-field. These markets, however, did not in any way take to themselves the character of an exchange. The market-field was the general meat market and assembly place, and the Strand was the meeting place for country wagons. They serve to identify the site of the present exchange with the early traditions of the trade of New York, but that is all.

The first building known as an exchange was erected in 1690-91 at the foot of Broad Street, to which place the scene of water front activity was shifted from the Strand at the foot of Whitehall Street. This building was first erected as a Shambles, but with the closing and moving of the other markets became the resort of all sorts of traders, and gradually became known as "The Exchange." This was followed by the erection in 1752, on the same site, of a much more pretentious structure known as the Royal Exchange, and sometimes called the Merchants' Exchange. In connection with the erection of this building the city records of 1752 contain the following:

WHEREAS, Several gentlemen, in this city, having voluntarily subscribed toward the erection of an exchange, at the lower end of Broad Street, near the Long Bridge, Mr. John Watts appeared before the board with a plan thereof, and desire their approbation, to which plan they unanimously agreed, and for the encouragement of so laudable an undertaking, voted that Mr. Mayor issue his warrant to the treasurer to pay one hundred pounds toward carrying on the work on said building. (Valentine's Manual, 1858.)

This exchange was a general exchange for all commodities, foodstuffs included, as was the old market house which preceded it.

Previous to the erection of the Royal Exchange, however, there was erected a little shed at the foot of Wall Street, known as the Meal Market. This was the first real grain exchange or market in New York. The corporation records of June, 1727, refer to it as follows:

It is ordained that the market house at the lower end of Wall Street is appointed for the sale of all sorts of grain, corn and meal, and none of such articles are to be sold in public market at any other place.

This establishes it as an official grain exchange, and as the direct pioneer of the present exchange. It continued in active existence until 1762, when its business scattered to the Royal, or Merchants', Exchange, the Broadway Market, and to the various assembly places on Wall Street, which had even at that time assumed its character as the financial center of the city.

The exciting political events of the period, together with the Revolutionary War, had much to do with the making of trade history in New York. The Royal Exchange and the Meal Market passed out of existence. In their place came the Wall Street Coffee Houses, the Merchants' Coffee House first, then the Downtown Coffee House, in which the commercial exchange met. The coffee house system had its origin in private enterprise, as well as public need. The idea was not at all new, for even the Royal Exchange had its coffee room upstairs.

More room was soon needed, and a more perfect organization demanded, and in 1825 the erection of a building for the Merchants' Exchange was begun. This building was finished in 1827, and next to the City Hall was the most imposing and costly building in the city. It was destroyed by fire in 1835, but was immediately rebuilt. In its later years it became the United States Custom House, and now, remodeled, is occupied by the National City Bank. The new building had a frontage of 200 feet on Wall Street, a depth of 160 feet on Hanover Street and William Street, and was seventy-seven feet high. Its rotunda had a height of eighty feet, and the dome was "supported on eight pilasters of fine variegated Italian marble." New York always took a pride in its classical front of eighteen Doric columns of Quincy granite, each thirty-eight feet high and four and a half feet in diameter. As an illustration of how deep that pride was, we have only to note that these columns have all been preserved in the new building of the National City Bank.

The merchants' exchange was a general commercial center and embraced all branches of trade. Merchants in all lines of commerce met here daily to consider questions incident to their trade, gather the latest news and transact their business. The grain merchants met in this exchange every day at two o'clock. The center of the flour and grain trades, however, remained at the corner of Broad and South Streets, where the flour men met daily on the sidewalk

for the transaction of business before assembling at the regular exchange. It was at this time that the great European demand for American foodstuffs set in and business began to grow with leaps and bounds. It was not long before the South Street merchants became tired of the journey to Wall Street for the nominal settlement of contracts already entered into, and out of the sidewalk gathering there was organized in 1852 the New York Corn Exchange. This exchange was chartered in 1853 and leased the store at No. 16 South Street. It soon became crowded for room and leased other adjoining property until it had control of two buildings on South Street and two buildings on Broad Street, out of which a single "L" shaped room was created for exchange needs.

But makeshifts would not suffice for growing needs, and in 1860 out of the members of the corn exchange there was formed a corporation known as the "New York Produce Exchange Company" for the purpose of erecting a suitable building for a produce exchange on the block bounded by Water, Pearl, Whitehall and Moore Streets, the site of the old Custom House Bridge Market. This building was completed in 1861.

A second body known as the "New York Commercial Association" was organized by members of the corn exchange and others, and this body was the real exchange. It occupied the new building as tenants, but managed its own affairs, adopted its own rules, etc.

In 1862 the new association was granted a charter so broad and comprehensive that it still remains unchanged in any of its essentials and has frequently been used as a model in the organization of other exchanges. At the close of the first year the membership numbered 1,238. In 1870 the membership had increased to 2,023. In 1868 the name was changed to the "New York Produce Exchange," and in 1872 the exchange took over the building as owner. Because of the immense amount of business transacted and controlled by its members, all of which was carried on under its rules and regulations, it became at this time the wealthiest and most influential exchange in the country, and it exerted all its power and influence for the development of the highest standards in business life. It continued to grow rapidly in prestige, influence and importance, and in 1878 its membership numbered 2,468. Its building, with both floors given over to exchange use, became too small for its needs and a movement for a new building began.

Funds were gathered by passing a by-law in 1880 limiting the membership to 2,700 and fixing the initiation fee at \$1,000. Later 300 additional memberships were issued at \$2,500 each. These were quickly taken and a new building was assured.

The story of the new building enterprise is the story of strong men working for an ideal and succeeding. The present site at Bowling Green, including a part of the old Market-Feldt, was secured in 1880, and on May 6, 1884, the members of the produce exchange took triumphant possession of their present building. This building has never lost its place as one of the finest buildings in the world dedicated to commerce and trade, and in the eyes of many people its trading floor, as such, has no rival in the world. The building has a front of 312 feet on Whitehall Street, 150 feet on Beaver Street, 148 feet on Stone Street. The main building is 120 feet high, the tower rising to a height of 225 feet. The main floor consists of 31,680 square feet, the dimensions being 220 by 144 feet. The stained glass skylight overhead has an area of one-fifth of an acre. The girth of the outside walls of the building is one-fifth of a mile. Other adjoining property has since been acquired, the value of the whole being now variously estimated at from \$6,000,000 to \$8,000,000.

Thus we see that the New York Produce Exchange is the outgrowth of the needs and necessities of the commerce of the port of New York. It was not manipulated into existence; it was not organized out of hand. It began on the sidewalk and has grown to its present magnificent proportions because it is the best possible expression of those needs and necessities. In fact, it is those needs and necessities in the concrete.

The New York Produce Exchange is a great big market-place, nothing more, nothing less. On its floor wheat, corn, rye, oats, barley and other grains, flour, meal, hops, hay, straw, seeds, pork, lard, all sorts of meat food products, tallow, greases, cotton-seed oil and various other animal and vegetable oils, naval stores of all kinds, butter, cheese and other commodities are bought and sold in quantities ranging from a single package to whole cargoes. It is a place where men engaged in various mercantile pursuits and in allied industries, manufacturing or otherwise, gather for various purposes; to keep in touch with each other and thus in touch with all that is going on in the business world; to gather daily informa-



tion concerning growing crops, stocks of merchandise, movements of produce, current quotations for all sorts of produce in all markets of the world; to trade with each other as principals and for others as brokers and commission men; and to make initial arrangements for the care of all the details incident to business transactions, such as freight engagements, insurance, inspection, warehousing, delivery, etc. It is, moreover, a market-place where all transactions are safeguarded; where men must deliver what they sell and pay for what they buy; where, by force of all the circumstances, honesty must prevail, for here customs of trade have crystallized into rule and regulation, all grades and qualities are carefully defined and all trade terms and phrases clearly understood.

Each one of the various trades, such as the flour trade, the grain trade, the cotton oil trade, the steamship trade, etc., is to all intents and purposes an exchange by itself. Its members meet together in a given place on the floor. It is presided over by a trade committee, which interprets its rules and decides all disputes under the rules. It makes its own rules and regulations, subject to the approval of the board of managers; and in the making of its rules every trade member has a vote, thus making its rules the composite judgment of all interests concerned therein—great corporation, small dealer, buyer, seller, broker, commission man, exporter, etc.

Over and above these rules are the by-laws and rules of the exchange itself, which apply to all trades alike and have to do largely with the internal affairs of the corporation and its membership.

Hence the exchange has come to be a meeting place, not only of the man who handles cargoes for world distribution, but of the butcher, the baker, the grocer of New York city and vicinity, who recognizes the conveniences it affords, the opportunities it presents and the safety it gives.

The exchange itself is merely the organized machinery of a great market-place. Its main chartered purposes are: to maintain a suitable room for such market-place; to inculcate just and equitable principles in trade; to establish and maintain uniformity in commercial usages; to acquire, preserve and disseminate valuable business information; and to adjust controversies and misunderstandings between persons engaged in business—and this is all that it does.



In discharging its functions it appoints and licenses, on the nomination of the various trades concerned, inspectors and weighers; maintains a grain inspection bureau, a flour inspection bureau and a chemical bureau for the official analysis of certain food products. It provides machinery for the adoption of trade rules and their enforcement. These trade rules apply to the non-member as well as to the member, and the non-member as well as the member has the privilege of using the machinery provided by the exchange to compel their enforcement. Through its rules for the handling of business, large economies of labor and expense are effected, and it virtually becomes a great clearing house of commerce.

It has general agreements with warehousemen, with great railroad lines, with various steamship and other maritime interests, covering the general needs of the trade at large, and in many instances these agreements have resolved themselves into forms of bills of lading, charter parties, etc., and are used generally in the commerce of the port. Agreements with the railroad companies also provide for the grading of grain at the railroad terminals in such manner as to effect large economies in labor, expense and terminal space. In the matter of grain, even the charges for receiving, weighing, discharging, towing, lightering, blowing, screening or dusting, etc., are subject to general agreements entered into by the exchange and the various interests concerned therein.

The regulated conduct of business on the New York Produce Exchange and similar exchanges accomplishes in a very natural way what the congress and the courts have been seeking to accomplish by force of law; that is, by the free and unrestrained use of an open market it prevents combinations in restraint of trade. The great monopolistic corporation is the one great foe of the commercial exchanges. An open market in which all the world may trade is just what such corporations do not want. It may be of further interest to note a fact that all merchants are well aware of—that an open market in which there is large trading tends to minimize fluctuations in value. A narrow market means violent fluctuations, but a great, broad market, capable of absorbing all business thrown into it, reduces fluctuations in values to a minimum.

Of course, in the same degree that the exchange makes trading easy and safe for the merchant, it makes trading easy and safe for

the man of a speculative turn of mind who wishes to act on his judgment as to values in precisely the same way that the title guarantee and trust companies, in combination with great estates and other financial interests making it easy and safe for a poor man to buy a home or for anybody to buy real estate, make it, in the same degree, easy and safe for the man of a speculative turn of mind to buy and hold real estate for an advance in value. In this connection it should be remembered that, though by the perfection of its machinery for the handling of business transactions, it enables men to make speculative purchases and sales, it also, by the same perfection of machinery, enables merchants to remove entirely the element of speculation from their business.

An indication of the great variety of interests represented on its floor is found in the fact that an attempt to make up a classified business list of its present membership resulted in a list of eighty-four headings, and one of these was miscellaneous with 202 members included therein; 297 members are identified with the flour industry; 256 with grain; 374 are receivers and shippers of general commodities; 133 are connected with transportation interests, 91 of these being identified with the steamship trade, showing the great importance of the export trade on the floor; 131 are provision men, 88 are concerned in the various lines of oil, 64 deal in stocks and bonds, 54 are bankers, 50 are insurance men, 38 are brewers, 37 are grocers, 63 are executives of corporations, etc. Hay, seed, feed, elevating, inspectors, weighers, measurers, tallow, greases, fertilizer, naval stores, millers, custom brokers, lawyers, bakers, coffee, lumber, vinegar, dried fruits, beans and peas are all included in the list, and so it goes on.

Even this partial list will, no doubt, surprise those whose only conception of a produce exchange is that it is a place where a few men meet for the purpose of speculating in wheat for themselves and for others. It is quite true that there is a wheat pit on the floor of the exchange; the grain business of the port could not be transacted without it. There is also a lard ring and a cotton oil ring. The trading in lard is insignificant. In cotton oil the trading is heavy, but is practically all confined to those whose business is in some way or other related to it. In wheat alone is the trading at all general, and this is because it is an article of universal interest. How small a figure the speculative business as such counts in the

business of the whole membership is shown by the fact that only 256 members are identified in any way with the chief article of speculation, and of these many are not at all concerned with the speculative side of the business and do not even use the future market in their business transactions. Over 100 of the 256 credited to the grain trade are in this class. No record is kept in New York of daily transactions in "futures in wheat." The business is largely contingent on the stock of wheat carried, and this in turn, aside from local needs, is contingent on the exportable surplus of the current crop and on whether Europe is buying our wheat or not. European interests trade largely in the New York market, and their operations are mostly of that hedging character so essential to the safe conduct of legitimate business.

The New York Produce Exchange is a semi-public institution. Its charter is a broad one and the state expects a full return in service to the community. Its functions are not alone to maintain a room for its own use and to establish uniformity in commercial usages for its own benefit. It must gather and disseminate valuable business information. This it does. Instantaneous quotations are shown on its blackboards in wheat, corn and oats from Chicago, Toledo, St. Louis, Kansas City, Minneapolis, Duluth and Winnipeg; in provisions and oils from Chicago; and cables are shown from Liverpool, Paris, Antwerp, Berlin, Budapest and Buenos Ayres, and all this information is given to the public through arrangement with the telegraph companies. Its statistical department is maintained at an expense of between \$40,000 and \$50,000 per year, and renders very valuable service to the whole community.

One of the chief functions of the exchange in connection with its public service is to foster and develop the commercial interests of the port of New York. In this the exchange itself is vitally interested, for anything affecting the commercial interests of the port, either favorably or unfavorably, is instantly felt by its members. While it interests itself in all legislation affecting commercial interests, probably its chief service to the port at large lies in its constant effort to keep open all avenues leading to New York. Under this head may be placed the efforts of the exchange to force the withdrawal of differential railroad rates against New York and its splendid work in connection with the new barge canal, for which it is largely responsible.

An illustration of the public value of its work along these lines may be found in the result of its recent single-handed contest against the practically prohibitive railroad rates on ex-lake export grain at-and-east of Buffalo. It succeeded in its efforts in May last, and as a result New York grain exports in May and June doubled over last year, practically all at the expense of Montreal, which port had been profiting at the expense of the Atlantic seaboard ports for several years by the railroad rates in its favor.

In its effort to adjust controversies and misunderstandings between persons engaged in business, its arbitration committee plays an important part. This committee has large powers in all matters submitted to it. It has the power to subpoena witnesses within certain districts, and all its decisions have the same force and power as a decision of the supreme court, and upon proper filing and proving the clerk of the supreme court will issue a judgment thereon. The arbitration committee has always been held in high regard by the business world. It has been extensively used, and by its splendid service has done much to advertise and popularize arbitration as a means for the settlement of business differences.

The complaint committee is the grand jury of the exchange and is the key to the enforcement of all its rules. All trade differences not submitted by agreement to some one of the trade committees or to the arbitration committee for settlement may be brought to an issue by a complaint. This results in an inquiry by the complaint committee, whose first aim is to conciliate the disputants. Failing in this, it either dismisses the complaint or refers it to the appropriate trade committee for settlement or to the board of managers for discipline. Non-members may use the committee or may be proceeded against in any case arising in connection with a transaction entered into with or through a member. Disciplinary action against non-members may result in their being denied representation on the floor of the exchange and members prohibited from trading for them. Many agreements to arbitrate are reached and many cases are settled out of court by threatened use of the complaint committee.

In common with many other exchanges, the New York Produce Exchange maintains a gratuity system making provision for the families of deceased members. When it was first established, membership in the gratuity system was made optional with existing

members but compulsory on all future members. As the system soon grew to be very expensive, it raised many serious membership problems, causing a gradual withdrawal of memberships for which the owner had no further active use, and preventing many whose use of membership would be merely nominal from uniting with the exchange. These problems have been wisely handled, and by means of an associate membership class it is now possible to join the exchange without assuming gratuity obligations if one so elects.

There are one hundred associate members on its list of membership. Gratuity matters have played an important part in the history of the internal affairs of the exchange during the last fifteen years, but, as they have nothing to do with the history of the exchange as a market-place, or with its economic position as such, they have not been referred to at length in this paper.

Because of its large property holdings the exchange is very strong financially, and after providing for all its work has a yearly surplus of \$60,000 to \$70,000, half of which is paid into the gratuity fund, the remainder being used for the purchase and cancellation of surplus memberships, thus keeping the membership an active one and gradually settling the gratuity problem. The present membership is 2,055, including associate members.

## MERCHANTS' EXCHANGE OF ST. LOUIS

BY GEO. H. MORGAN,  
Secretary, Merchants' Exchange of St. Louis.

The great exchanges of the country are the mediums through which the products of the field and farm are transferred from the producer to the consumer. To meet the demands of commerce there must be cities where large accumulations can be stored ready for the demand of those who, either as manufacturers or shippers, move the products in large quantities as there is a demand therefor. The farmer disposes of his crop to the country dealer, who with limited supply of storage room must move the commodity to some large central market where it will meet with ready sale and be shipped for domestic consumption or for export, or be held in storage awaiting a demand. There must be a large supply on hand, as grain especially is moved in quantities and must be inspected and classified as to grade and condition. Therefore, the middle man is an absolute necessity, being able to handle and care for whatever amount may be put on the market and dispose of same as the necessities of business require. The exchanges are of special benefit to the country shipper and farmer in making a market where their products can always be sold and in furnishing information as to values and movements of grain and other products by wire and mail so that a choice of markets can be had.

These organizations sometimes designated as boards of trade, chambers of commerce, merchants' exchanges, grain exchanges and produce exchanges are organized to handle in the quickest and most economical manner the various commodities, to inculcate just and equitable principles of trade, to establish and maintain uniformity in commercial usages, and to acquire and disseminate valuable business information for their own guidance as well as for their customers.

Among the most important of these organizations is the Merchants' Exchange of St. Louis the oldest trading organization in the United States and the third largest primary grain market. It is the legitimate successor of the St. Louis Chamber of Commerce, organ-



ized in 1836 and incorporated January, 1837. It owns and occupies a magnificent building, occupying two-thirds of a square, fronting 239 feet on Third street by a depth of 222 feet. In the western part of the building is located the grand hall, where the daily meetings of the exchange are held, and where business is transacted from 9.30 a. m. to 1.15 p. m. Here daily assemble the grain, provision, flour, seed and produce dealers to buy and sell their various lines, and the bankers, transportation agents, insurance representatives and others meet to negotiate business.

The grand hall, 221 feet in length, 93 feet wide and 80 feet in height, is unobstructed by posts or pillars and is surrounded by large windows affording an abundance of light and ventilation. The ceiling is a work of art, divided into three compartments each containing a grand medallion. The central figure is emblematic of the great city of the West, surrounded by groups typical of the agricultural, mineral and industrial products of the Mississippi Valley. The north compartment represents characteristic types of European nations, while the south medallion portrays types of other nations. The cornice surrounding the ceiling forms a border twenty feet wide, containing the names of all the states and representations of the merchant flags of the world. The other portions of the building are leased to dealers in grain and grain products, millers and others actively engaged in business transacted on the floor of the exchange.

While the largest interests are grain, grain products, flour, provisions, seeds and kindred lines, the merchants' exchange represents the varied industries of the city, and among its fourteen hundred members may be found bankers, brokers, manufacturers and others, who often find occasion to visit the exchange to meet and make acquaintances and discuss matters pertaining to the general interests of the city. During trading hours the floor of the exchange is a busy mart; on its tables are displayed samples of grain, flour, etc., for sale, and buyers and sellers meet and in a short time transact a vast volume of business that it would take hours to accomplish without a general meeting place.

Quotations of all the principal domestic and many of the foreign markets are received by wire and posted on the bulletin boards by operators who transcribe the reports without delay, making the service practically instantaneous. Quotations of the New York stock market are posted in the same manner and a large business is trans-

acted in stocks. On the grain tables where samples are exhibited sales are made of the receipts of the day, while in the "pit" trading in futures is carried on.

As before stated St. Louis is the third largest primary grain market, being exceeded only by Chicago and Minneapolis. In futures, sometimes erroneously called options, the volume of transactions is probably greater than any other primary market except Chicago.

Geographically the position of St. Louis as a grain center is ideal. Located in the heart of the great Mississippi Valley, near the junction of the Missouri, Illinois and Mississippi rivers, and in close proximity to the Valley of the Ohio, with twenty-seven rail trunk lines leading in all directions and water routes by the great rivers of the valley, furnishing unexcelled transportation facilities, it is in a position to command to a large extent the surplus grain of Missouri, Illinois, Kansas, Iowa, Nebraska, Minnesota, the Dakotas, Colorado and other states; while its exceptional advantages as a distributing point make it the point of distribution not only to the eastern seaboard and the south and southeastern territory, but to the gulf ports for export.

The annual receipts of grain, varying with the extent of the crops, aggregate from seventy to eighty-six million bushels, while the amount of flour manufactured and shipped reaches some three million barrels. Situated in the center of the belt producing soft red winter wheat a large percentage of this grade finds a market in St. Louis.

The commerce of the states of the Mississippi Valley was for many years carried upon the great rivers. While to a great extent this commerce has been diverted to rail lines paralleling the river and reaching many of the cities and towns back from river points, the unparalleled increase in the development of the great West with resultant tonnage to be handled, demands the use of every facility for moving this vast commerce, and it is by all recognized that the water routes must be utilized in conjunction with the rail lines to move promptly and economically the vast volume of traffic increasing year by year. To this end movements are on foot to place upon the Mississippi River steel boats and barges of modern make and power, adapted to the needs of river commerce, and the installation of modern methods for unloading and loading the boats and barges

at minimum expense. Two lines are to be placed in commission between St. Louis and New Orleans; a packet line is to be put in commission on the Missouri between St. Louis and Kansas City, and the present lines to St. Paul and intermediate points extended and enlarged.

With the improvement and deepening of the channel now in progress under the direction of the general government, the development of the inland waterways to something like their former greatness is confidently expected. Then the cities of the valley will be able to share in the vast trade that will develop to Central and South America, the Pacific states and the Orient upon the completion of the Panama Canal.

The larger part of the business transacted on the exchanges of the country is in grain. The grain is either bought at country points or shipped to be sold on commission, and is either sold on arrival on track, delivered on contracts or placed in elevator for future disposition. In the event supplies are greater than demand for immediate handling, dealers are always found ready to buy the grain and store it for future needs. This applies in all markets as the customs are practically the same. All grain received is inspected by state inspectors and graded, and if placed in elevators is stored with other grain of same grade or each car lot put in special bin. Grain thus stored and graded is deliverable on contract, the elevator receipt stating quantity and grade, being a legal tender and conveying possession of the property. Grain shipped for sale by commission firms pays all expenses of freight, inspection and weighing, interest on advances and all other charges, which with the commission is deducted from the gross proceeds and a check for the balance mailed promptly to the shipper. Contract grades are generally what is known as No. 2, this grade being intended to include the majority of merchantable crop free from dirt and damaged grains. The United States Department of Agriculture furnishes a monthly statement of condition of crops, which is wired direct to the various exchanges and to the daily press, and influences to a considerable extent the market.

The Merchants' Exchange of St. Louis, while primarily a trading body, keeps in close touch with all movements of a financial or commercial character affecting the interests of the city, state or nation. Being careful and conservative in the consideration of all public

questions, its opinions are given due consideration by legislative bodies and assist in securing the enactment of proper laws for the safe conduct of business.

The Merchants' Exchange maintains a traffic bureau for guarding the transportation interests of the city and preventing or correcting discriminations in freight rates. The exchange also maintains a department of weights for the purpose of securing the accurate and correct weighing and methods of weighing of all property handled by members of the exchange and all others requesting the service. The rules of the exchange provide committees of arbitration and appeals for the consideration and adjustment of differences arising between members, thus avoiding the expense and delay of legal proceedings.

It is practically impossible to estimate the volume of business transacted on an exchange. No record is kept of sales or purchases but the aggregate for the year amounts to millions of dollars.

A clearing house for the clearing of future sales is conducted by a corporation, which while independent and not under the rules of the exchange, is practically an adjunct and greatly facilitates the settlement of contracts.

THE EXCHANGES OF MINNEAPOLIS, DULUTH,  
KANSAS CITY, MO., OMAHA, BUFFALO,  
PHILADELPHIA, MILWAUKEE AND  
TOLEDO<sup>1</sup>

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THE MINNEAPOLIS CHAMBER OF COMMERCE

Back in October, 1881, when the raising of scalps was a more popular pastime with the bulk of the inhabitants of the Northwestern prairies than the raising of crops, a handful of progressive citizens of Minneapolis got together and organized a Chamber of Commerce Association. Certificates of membership to the number of fifty, or thereabouts, were issued and Col. G. D. Rogers was elected secretary. Matters dragged along for a few years with the infant organization little better than holding its own.

The original value of the membership certificates gradually increased and the personnel of the body continued high, but there were few, if any, of the charter members who dreamed that the present powerful institution would be the outcome of the small beginning made in that early day for the city of Minneapolis. It is true that the Falls of St. Anthony were being developed for water power and a good share of that power was being used for grinding flour, but crops were meager and very few citizens of the country had the hardihood to predict such rapid development of the Northwest as has been witnessed.

The railroads solved the problem, however, and with the rapid influx of settlers a market was needed for the products of the prairies. Minneapolis was the natural market and the soil proved adapted to wheat. Consequently, from the small beginning of the association in October, 1881, the Minneapolis Chamber of Commerce has grown to be one of the most powerful institutions of its kind in the country and the Minneapolis wheat market has grown to be the greatest primary wheat market in the world.

The real holdings of the association now represent an invest-

<sup>1</sup>A series of short articles reprinted in whole or in part from *The National Hay and Grain Reporter's* issue of May 20, 1911. These articles were specially prepared for *The National Hay and Grain Reporter's* number on "Grain Exchanges," and are here reproduced by special permission.

ment of over a million dollars and its members own and control property worth many millions. In the fall of 1882, Col. Rogers wrote an article for a leading Twin City newspaper predicting that the membership certificates, then numbering 538, would be worth \$3,000 within twenty years. The article brought down considerable ridicule on his head, but the prediction came true nevertheless, a high water mark of \$5,000 being touched in about that time. So the Colonel, who is still actively connected with the affairs of the association as counsel, lived to laugh last. It was decided that 538 members were all that were wanted and needed and a limit was placed, but in 1900 a dozen more certificates were issued, making a total of 550, where the limit has finally been fixed. These memberships are worth in the neighborhood of \$4,000 at the present writing. Of the original fifty members about ten still hold certificates, among them the Hon. J. C. Haynes, mayor of the city, who drew up the articles of incorporation for the association.

System in handling the grain was the order of the day and it was developed as fast as the trade demanded. Every effort was made to encourage agriculture and with the possible exception of one or two every year has seen an increase in the volume of grain coming into this market. Still holding the palm of being the greatest primary wheat market of the country, Minneapolis recently added the title of the greatest primary barley market of the country. Primarily, however, Minneapolis is the great milling center, made so by the unrivaled milling quality of Minnesota wheat. The malting industry is in its infancy as far as this market is concerned, but has made great strides in the past few years. The milling industry has outgrown the Falls of St. Anthony long since and steam auxiliary plants are turning most of the wheels. The latest innovation is the electric equipment recently installed by one of the largest and foremost milling companies.

The Minneapolis millers have always been in the lead as regards the correct and scientific way of making flour. Extensive laboratories are maintained by all of the leading companies and when the flour comes off the rolls the volume and quality of the same is known to a nicety. The high prices recorded in the local cash market in recent years have drawn considerable wheat from distant localities and tests are made of the different blends until the buyer on the exchange floor knows just how much of the softer



Minnesota and Iowa wheat is needed to mix with the hard Northern Minnesota and Dakota wheat. A type sample is made and the season's grind is based on it as conditions and the quality of the crop change from year to year. Millers have had a leading voice in the policy of the association for years, and it is due to their aggressiveness in the flour markets of the world, to a great extent, that the local exchange has grown so in importance. They have nearly always paid the best price prevailing in the country for wheat. The biggest millers of the country are members of the local Chamber of Commerce and they control the largest mills of the world.

It would not be fit nor proper to give the millers the whole credit for the expansion of the Chamber of Commerce, however. The elevator companies whose lines reach far out into the country and bring grain into this market have a great deal to do with it. Big line elevator companies having their headquarters in Minneapolis handle the crop readily and bring a great deal of grain to this market that otherwise would find its way to competitive markets. Even though the margin of profit has been cut down and the farmers co-operative movement has made it hard sledding in late years, there are a number of powerful elevator organizations located here. In fact it is nip and tuck between the elevator and milling crowd as to which branch of the trade is of greater importance in the affairs of the association, but honors to date are about even. There is little friction between them, however, and the harmony is seldom disturbed. The terminal elevator capacity controlled by members is well over the 40,000,000 bushel mark, or second in the country in size. A good share of this is represented by modern, up-to-date steel and concrete elevators second to none in the world. The bulk of the business is under Chamber of Commerce rules and regulations and the banks accept the warehouse receipts without question when presented as collateral.

Along with the rest of the trade the elevator operators keep abreast with the times. Through them, to a great extent, the season's requirements are learned. Their system of getting a line on the crop conditions is right up to date and when they have canvassed their agents for reports there is little use of waiting for other figures as a guide. In fact the information gathered by them is in great demand by the trade in general and many base their

position on the market on them almost exclusively, so great is the territory the houses cover.

The commission department of the association is taken care of by an alert set of men, mostly young in years, but old in experience. To get all the traffic will bear for their customers is the consuming ambition of most of them. A good sale is a good sale, and the shipper is given all that can be gotten out of the market. Owing to the keen competition for the country trade it is probable that there is greater system here than in other lines. When a car arrives it is disposed of as promptly as the market will permit and returns made to the consignor. The great size of the freight cars nowadays and the high prices prevailing make a carload of grain quite an investment and the country dealer quite naturally wants to get his money back as quickly as possible and keep it working.

There are many cases on record where a car of wheat has been received, sold and weighed on the same day, the commission house clerk getting the weights the next morning, billing for the car and making returns to the shipper the day following. It is very ordinary for returns to be made within three or four days from the receipt of the grain. In the busy season, especially is the railroad more than willing to co-operate with the commission man and get the stuff unloaded as soon as possible and the car on its way back to the country again. The study of the needs of the situation brings a lot of grain to this market that otherwise would be diverted to other markets, as the shipper can get prompt returns, which in many cases makes up for a slight difference in prices in favor of other markets.

The understanding between the commission men and country millers, with mills within reasonable distance of Minneapolis where state weights can be obtained, also tends to aid the former in getting business away from competitive markets. Wheat arriving in the local market and sold to these millers will bring a half cent premium over the wheat sold for local delivery and weights. The country millers make it a point to handle the grain promptly and send the certificate of weights to the commission house as quickly as possible. The extra half cent more than makes up for the extra time taken for making returns to the shipper. Relations between the commission men and millers are very cordial, and few indeed are the differences that can not be settled amicably and with promptness and dispatch.

Every facility is made use of by the buyer and seller in the cash department. The big electric quotation clock is in plain sight at all times and the latest bid or offer price in the pit is recorded instantly by the official recorder. This clock is the only one of its kind in the country, or was up to within very recently. It is the first one that could be successfully manipulated and has been the subject of much comment as well as the cause of many visits of investigation by representatives of other exchanges. It was planned by a former chief engineer of the mechanical department of the association. An accidental cutting off of the power at one time shortly after the installation made the cash wheat men doubly appreciative of the service it was performing. This clock adds a finishing touch to what is perhaps the most modern and compact trading room of any exchange in the country. The fluctuations recorded in an active market with its big red figures are rather demoralizing to a trader who is on the wrong side, more so than a few insignificant chalk figures could be. Under the clock board markers are busy chalking up the fluctuations in outside markets for the benefit of the members, some of whom need to know the value of wheat in the winter wheat markets and some who need the coarse grain quotations.

Dealing in futures was not of any importance in the local market until some time after the association was organized. In fact the commitments made were no more or less than sales and purchases to arrive within certain dates. Now, however, there are a number of big commission houses who make a specialty of looking after trades in futures for their customers. This branch of the business is as well attended to as any and the houses spare no effort to get the best they can for the people they represent. Several of them have offices through the country and in active markets do a tremendous business. In fact, when the Northwest traders get real busy they often set the pace for the rest of the world, at times when the spring wheat crop is threatened with drought or rust. The reasonable size of the pit makes quick action possible and the opportunity offered for quick trading brings in a good deal of business and the fluctuations are an influence in the markets of the world.

Recently a hedging order was cabled direct from Antwerp, for execution in the local pit. Though there may be larger markets in the country in the way of trading in futures there are none that are

ahead of the Minneapolis market in the handling of the trades and the official checking of the records. A complete record of the transaction in the pit must be sent to the customer at the close of the session, giving the name of the buyer or seller and the time the trade is made. Every fluctuation is noted and the time at which it occurred. These figures are published in the official publication of the Chamber of Commerce, where the trader may easily verify and check any discrepancies. Then all trades are reported to the clearing house where they must check against each other. Members failing to report trades are fined and in case of error or tardiness there are fines to be met which make the careful and prompt handling of the records a matter of economy.

It is proper to mention the Chamber of Commerce Clearing House Association at this point. It is the pioneer organization of its kind in the country and for a number of years was the only one. Most of the larger firms own memberships in it and it has been found to be almost a vital necessity to the trade. Certainly it insures less friction than the old way of trading and also facilitates business generally. When the trades are checked at the close of the session the member gives a check to the clearing house for margins or in case the market has fluctuated in the favor of their customers they receive a check. It does away with a great deal of trouble. To settle with the clearing house at a certain time every day is a far different matter than calling each other for margins. Its plan of operation is practically the same as that of the clearing house of the banks and fills a need just as well. Since it has been found successful here, several other markets have adopted the plan and more are investigating it. Its management is intrusted to its originator who is undoubtedly the closest mouthed individual in the community.

Of course the information he gets in his official capacity would be of great value to traders, but a perfectly neutral attitude and a "poker face" are necessary to a man holding his position. There have been no complaints as to his qualifications to date. With the clearing house a part of the system there is no more satisfactory or reliable hedging market in the country. Under the quotation clock in big red letters is official notice to the public that the quotations are the property of the association only and bucket-shops are forbidden the use of them. There is never a relaxation of the vigi-

lance over them where the bucket-shops are concerned and as fast as leaks have been discovered they have been closed up promptly until the operators have given up in disgust. One of the biggest bucket-shops in the country met its Waterloo when it locked horns with the Minneapolis Chamber of Commerce. Just say "bucket-shop" above a whisper and there is a racket in a minute.

One of the chief objects of the Minneapolis Chamber of Commerce is to be of as great benefit to the producing and consuming ends of the grain business as possible. It would be hard to find a more progressive and liberal minded set of business men in the country or one that is more interested in the development of the section it serves, yet the grain raisers persistently misunderstand the motives and view the moves of the association with suspicion. To become a member an applicant has to undergo a rigid investigation of his previous career and must show his responsibility to look after the interest of possible customers without flunking. The application is first handed to the membership committee and when they are through investigating the matter is put up to the board of directors where it is usually passed upon and the applicant admitted to membership if the report of the membership committee is favorable. Occasionally, however, a snag is struck in one of the directors who may have some direct information of adverse nature or may not just like the report. If such is the case further investigation is made and the matter is gone over thoroughly before a certificate is transferred to the applicant. By the foregoing procedure the association keeps the morals of its body high. The shippers are insured honorable and just treatment and once admitted into the association the member is entitled to the full confidence of the trade in general.

Every care is taken to show equal justice to all in the trade and shady or questionable transactions are sure to be followed by swift and sufficient discipline. Flagrant offenses are very rare and no time is lost in purging the roll of the offending member's name. There are no memberships issued to corporations and each individual member is responsible for the actions of his firm or company.

Wheat remains the leading grain in this market, but the coarse grain trade has grown wonderfully in the last decade. If the reciprocity pact with Canada is passed there will be a great deal



more corn and oats sown in the Northwest and further strides are looked for in that direction. The first year of the association's life about 25,000,000 bushels of wheat were handled and about 3,000,000 bushels of coarse grain. Five years later about 40,000,000 bushels of wheat were handled and the coarse grain movement began to pick up decidedly until now the percentage of the movement is a great deal less in favor of wheat. In 1886 about a half million bushels of corn were received in this market and 155,000 bushels were shipped out. Of the 1909 crop 7,021,000 bushels were received and 5,041,000 bushels shipped. Oats receipts increased from 1,877,000 bushels to 17,610,000 bushels in that time and barley receipts from 138,000 bushels to 22,555,000 bushels. Rye receipts in 1886 were 11,100 bushels as compared with 2,442,000 bushels from the 1909 crop and flax receipts were 349,000 bushels compared with 9,251,000 bushels. The last named cereal, however, was at high tide in 1905, when 12,231,000 bushels were marketed. The notable gain was made in the barley movement, which has increased heavily every year for the last ten years.

Wheat receipts from the crop of 1885 were 32,767,000 bushels and from the crop of 1909, 101,567,000 bushels. Shipments from the 1909 crop were 22,093,000 bushels compared with shipments of 4,929,000 bushels from the 1885 crop. From the 1885 crop 5,428,581 barrels of flour were ground and shipped while 16,919,867 barrels of flour were ground and shipped from the 1909 crop. Last year 70,000,000 bushels of wheat were ground into flour by the local mills, which have a capacity of 100,000,000 bushels and which the millers expect to put in full use when the Canadian pact is ratified.

The above statistics will tell the story of the growth of the Minneapolis Chamber of Commerce in plain fashion. The development of the Northwest in the cereal raising line has been phenomenal and unsurpassed and the growth has been due in some measure to the market Minneapolis offers for the products and the high comparative prices paid for the wheat crops. The association is working hand in hand with the producer and middleman in the country and with a militant arm as represented in the Minneapolis Traffic Association, in which it is a leading influence, is protecting its territory from competing markets. The old Chamber of Commerce building, which readily housed members when it was built has been succeeded by a magnificent ten story building to which an



annex has been added to take care of the overflow of the last few years. Even at that a few big milling and elevator firms have quarters uptown because of the lack of space. The opening up of new country constantly in the Northwest and the better methods of farming in use and being encouraged will assure future growth and present indications are that the association has many years of expansion before it and a constantly growing influence in the trade of the world.

#### THE DULUTH BOARD OF TRADE

Duluth is at the head of deep water navigation on the Great Lakes, the farthest point inland that can be reached by the great carriers that have reduced transportation costs to the minimum. This commanding position makes it the great distributing center of the Northwest, and it is this that has made the Duluth Board of Trade one of the great primary markets of the United States—the third in point of total receipts, in all years of normal production in the Northwest.

The first receipts of grain at Duluth, came from the crop of 1870 and followed immediately upon the entrance of the first railroad. The great consuming markets of the East could be reached at cheapest cost by following the water route, and from the moment it became possible to make use of this highway of transportation the movement of grain turned this way and began the building of a great grain market at Duluth. As the facilities of transportation were improved and enlarged the business of the Duluth market rapidly increased, and with the great agricultural expansion of the Northwest, attained a growth that was practically without precedent in the country.

The eastern manufacturer of grain products looks to the Duluth market for his supplies of Northwestern grain. It is here that the eastern flour miller gets his supply of spring wheat; the maltster his northwestern barley; the food manufacturers and feed dealers their oats and the linseed mills their flax. The same advantages that have led to the building up of a great eastern shipping market have brought the development of a large export trade, its volume depending upon the market conditions existing in this and other countries.

When, a few years ago, the Northwest went extensively into

the raising of flax, Duluth immediately became the leading flax market of the country, which position it still holds. Since the beginning of the production of durum wheat it has held the same position with respect to that variety of grain, and is now the only market in which contracts for future delivery in those two commodities are dealt in. In spring wheat the demands of the mills of the Northwest must naturally be first supplied, but in obtaining those supplies the northwestern miller must meet the competition of the eastern miller who is bidding at Duluth for the fine wheat of the northwestern prairies. The existence of the market at Duluth is therefore a direct and convincing benefit to the producer of the Northwest.

The Duluth market is by no means at its zenith at the present time. Its prospects for the future are as bright as its record of the past. Tremendous as are the strides made by the Northwest in agricultural development, its possibilities have been far from reached. Almost one-half of North Dakota is untouched and the same is true of South Dakota. Northern Minnesota is a great fertile region which has been suffering from an impression that it offered little hope, but there are already signs that a great tide of immigration is coming this way. Montana is fast being broken into agriculture and is a veritable empire that will soon be one of the great grain raising states of the Union.

Should Congress adopt the reciprocity agreement, the result cannot but be to add to the importance of the Duluth market. The Canadian surplus goes East via the lakes. With free trade in grain the port of Duluth will be a competitor for the traffic and the Canadian farmer will have two markets wherein to sell his products where he now has but one.

The Duluth Board of Trade as an organization has prospered. It owns a handsome seven-story building 100 by 140 feet, practically free from debt. It has two hundred memberships outstanding, all in active use. Ample elevator capacity is an essential for every primary market, and Duluth is well equipped in this respect, the capacity operated by Duluth companies aggregating 32,275,000 bushels. Of this amount 24,500,000 bushels is regular with its warehouse receipts deliverable on contracts.

## THE BOARD OF TRADE OF KANSAS CITY, MO.

The Board of Trade of Kansas City was organized in 1869. The grain and milling business of Kansas City is, and has been, for many years, one of its most important industries. Situated, as it is, in the center of the very best farming territory of the country, with railroad facilities unsurpassed, it naturally is a great grain receiving and distributing market, drawing from Oklahoma, Kansas, Southern Nebraska, Western Iowa and Western Missouri. It is the second largest primary wheat market and ranks third as a flour milling center in the United States. The mills, when running at full time, require 65,000 bushels of wheat each twenty-four hours.

The following statement of the receipts of grain shows the development of the business in this market: 1870, 1,037,000 bushels; 1880, 9,029,930 bushels; 1890, 29,939,200 bushels; 1900, 46,638,250 bushels; 1905, 69,599,500 bushels; 1910, 50,221,300 bushels. These figures, however, are not a complete statement of the business done by the members of the Kansas City Board of Trade, from the fact that whenever the prices in this country are on a shipping basis with the foreign markets, large quantities of grain are bought by our members and exported direct, without passing through Kansas City and therefore do not enter into the statistical report of this board.

The handling of grain at terminal markets requires large storage capacity and these facilities must necessarily keep pace with the growth of the business. In this respect Kansas City has met the requirements of the trade, for the elevator capacity, which in 1880 was 1,560,000 bushels, has steadily grown and is now over 11,000,000 bushels.

The first flour mill in Kansas City was built forty-five years ago. In the early days of milling here, only soft winter wheat was ground. Hard wheat was not known as a winter crop. This variety of wheat was introduced by the Russian Mennonites, who settled in the central part of Kansas. These people brought with them to America seed wheat of their own raising in the Crimea. At first it found no favor, but afterwards it was discovered that it closely resembled the spring wheat of Minnesota, which wheat has made Minneapolis flour famous. At first the mills ground the hard winter wheat in an experimental way, but the quality of the flour and bread produced from it quickly caused an increased

demand, so at the present time all but the Kansas City mills grind the hard turkey wheat.

Kansas now produces an average of 80,000,000 bushels of wheat. This, with the large yield of Oklahoma and Nebraska, insures the Kansas City mills a constant and unfailing supply. Our millers find a market in the states east of the Missouri, Cuba and Porto Rico, and have some trade with South American ports. Kansas City flour is shipped in great quantities to Great Britain, Belgium, Holland, Denmark, Scandanavia, and to some extent to Mediterranean ports.

There is large and active trading in futures on the floor of the Kansas City Board of Trade. All trades in wheat are based on No. 2 hard wheat, which is known to the trade as "contract wheat" and the wheat deliverable in contracts must be acceptable to a Board of Trade Committee, which Committee is composed of experts appointed by the president and confirmed by the directors. This gives an opportunity for millers to buy for future delivery, which they may use as a hedge or accept delivery as they may deem expedient.

This is the only market in which future trading in wheat is based exclusively on hard winter wheat.

The State of Kansas in the year 1909 raised 154,255,000 bushels of corn. While the handling of corn and other cereals in this market is of great importance, yet it is small compared with the large quantity raised in the territory tributary to Kansas City. This can be accounted for from the fact that comparatively a small percentage of the corn raised is shipped out of the state, there being an enormous and increasing demand for this cereal for cattle feeding, the farmers finding it profitable to market their corn in the form of fattened beef and pork.

The board of trade for many years has had a thoroughly well established supervising weight department which insures absolutely correct weights. It also has a sampling department which is constantly growing in favor and usefulness. Increasing purchases and sales are made, based upon the sample submitted, which sample is deposited with the chief sampler and deliveries are made under the chief sampler's supervision. His acceptance or rejection is final.

The average yield of wheat per acre in most sections of the United States is much less than in European countries and of late

more general and active interest is being taken by agricultural colleges and economists, looking to the improvement of seed and more intensive farming. This, we believe, will result in producing a better and larger yield of cereals. In this, the Kansas City Board of Trade is deeply interested, giving it its moral and financial support. We trust that careless and indifferent farming will in the near future be a matter of history as pertaining to a people of a new country in possession of large undeveloped resources.

#### THE KANSAS CITY BOARD OF TRADE CLEARING HOUSE

Kansas City's rise to third place among the grain future markets of the United States dates from the organization of the Board of Trade Clearing Company, in March, 1899. Previous to that time the operations in deferred contracts were few and irregular, and the market had no rank as a speculative centre. As an illustration of the insignificance of the trade during the middle nineties, it may be recalled that one of the elder members of the board of trade, pointing toward the empty hexagonal pit, remarked: "That useless thing should be torn out and made into kindling wood."

But new blood was coming into the exchange, and the possibility of developing something more than a mere cash grain market was recognized. Somebody made a suggestion, and the result was the establishment of an association with the avowed purpose of facilitating the trade in futures. Kansas City being the leading winter wheat market of the country, as well as a big receiving and distributing point for corn and oats, the wonder is that traders here and throughout the Southwest had so long been content to send their hedging and speculative orders to Chicago.

The company was incorporated and capitalized at \$5,000, making the shares \$50 each. Within a year or two the success of the enterprise was assured, and in 1902 the stock issue was doubled, the 100 additional shares being sold at \$175 each, the book value at that time. Membership in the company was limited to Board of Trade members, the number of shares to be held by one person being restricted to 20. The actual number of members to-day is 110, and the book value of shares is \$350. Annual dividends of \$20 a share have been regularly paid, although the clearing charge has been reduced from 3c per 1,000 bushels to 2c.



Primarily the clearing house system was modeled after that of the Minneapolis Chamber of Commerce, but with the increase of business came the necessity for greater economy of time and a simplification of methods. The office work was systematized and perfected by W. L. Garrett, who was manager from May, 1900, to January 1, 1903. It was in 1901 that George G. Lee entered the service of the company as assistant manager. Under Mr. Garrett, Mr. Lee caught the spirit of the unique cancellation system, and, after further service under A. D. Wright, in 1903 and 1904, Mr. Lee was chosen as manager, with G. M. Edgecomb as assistant. The office has since remained under the control of the two men last named, and their work is highly satisfactory.

According to the statement of Mr. Lee, the total operating expense of the clearing house is only \$5,000 a year, exclusive of telegraph charges for sending market reports to other cities. All work is done in a single room on the fifth floor of the Board of Trade building between 8 a. m. and 4 p. m. The rush comes with the close of the market, at 1:15 in the afternoon, as all reports must be in by 2:15. On Saturday, when the market closes at noon, the balancing of accounts is done by 1:30 p. m. Promptness in making returns to the clearing house is enforced by a fine of \$1 when a member is 15 minutes late, and every 5 minutes of additional tardiness costs \$1. The fine for errors is 25 cents.

"The manager has a wide latitude in calling for margins," said Mr. Lee. "This is necessary in cases of wild market fluctuations, or where members are suspected of financial embarrassment. As the clearing house is responsible for all trades put through it, close tab must be kept on the position of each member.

"One of the advantages of the system we use is the dispensing with the identity of the trades cleared through the house. All we know is that 'Tom' bought and sold so many thousand bushels of grain in a day, dealing with 'Dick' or 'Harry,' and that the returns of these other traders exactly correspond with 'Tom's' records. We don't know or care whether the trades were individual or for customers. That detail is a matter for the members' bookkeepers. Under the system the tying up of large sums of money in margins, in event that a long or short on the other end refuses to 'ring out,' is avoided. Thus an evil which tends to concentrate future trading into the hands of the stronger firms is eliminated. The theory is



that the small firm has the same right as the big one to handle future business, so long as the margins tendered to the clearing house are sufficient to protect the trades involved."

So well is the Board of Trade Clearing Company's system regarded that it has recently been copied by a similar organization in the St. Louis Merchants' Exchange. Nashville traders borrowed the idea a few months ago, and the system is in use in Omaha, Wichita and New Orleans.—By T. J. TANNER.

#### OMAHA GRAIN EXCHANGE

The nearer the point of production a market is situated, the greater the efficiency of that market, both to the producer and the consumer. This maxim has unquestionably been proven by Omaha, the youngest grain market of importance in the United States, which has risen in six years from a mere distributing point to a position among the first grain markets of the country.

From the time of the formation of the Omaha Grain Exchange to the present, the market has steadily grown in efficiency, and the skeptic who at first looked with apprehension on the exchange, has grown to respect and support it—the country shipper and outside purchaser alike attesting to its stability. Omaha is purely a primary market, and the only purely primary market of prominence in the country. Not a bushel of grain is received during the year except that which is shipped from the country stations. Fully fifty per cent of this is in turn reshipped to points other than established markets. This fact alone proves its efficiency as between the producer and consumer.

The country shipper of Nebraska, South Dakota and Western Iowa, consigning his grain to Omaha is not only assured of prompt railroad service because of the proximity of the market and thereby lessening his chances of deterioration, as in the case of corn, but this short haul greatly reduces his interest charges which are a big item during the course of a year's business. The weighing and inspection departments, which are independent and under the control of the exchange, are of the highest standard, and no better safeguards are offered in any market. The fees of this department are less than at any other large market. The reinspection rules are strictly adhered to, and the matter of discounts is left to a committee of

unbiased members of the exchange, who determine what discounts, if any, shall be allowed, according to the values of the grain and not according to any set averages of grades. Trading among the members is broad and liberal and a more square, more aggressive association of business men cannot be found anywhere. Prices are uniformly on a parity with the other markets, and the price of oats has been higher in Omaha the past two years than at any other point. For years, it has easily maintained the proud position of Second Primary Corn Market. Omaha has started the year 1911 as the fourth primary market of the United States.

Previous to the organization of the exchange, the elevator capacity was 2,140,000 bushels and the receipts for 1904, which was the first year of the existence of the exchange, were less than 18,000,000 bushels, of which approximately 4,000,000 bushels were wheat; 9,000,000 bushels corn and 4,050,000 bushels oats. Compared with this, the market received 24,000,000 bushels of corn alone last year, being the second primary corn market of the country. Receipts for the last two or three years have been about 43,000,000 or 44,000,000 bushels, or two and one-half times as great as for the first year of the life of the market. The elevator capacity has almost trebled, being now 6,115,000 bushels.

Though total grain receipts for last year varied but slightly from the previous year, Omaha gained over 3,000,000 bushels in corn receipts, growing to greater importance than ever before as a primary corn market. It is not strange, though, that corn receipts are large, or that it is expected that they will be still larger in coming years, as Omaha is a natural market for two great corn states, Nebraska and Iowa.

When the exchange was started, it was with a limited number of "smaller dealers;" the line companies had practically all the business. Now thirty-eight active grain firms hold membership in the exchange, with ninety-two active grain members. And at the same time the line companies are doing more business than ever before. The market has broadened. A large percentage of the membership does a consignment business and the market is broad enough now so that any commission merchant can always find an outlet for his patron's grain at attractive figures. More actual transactions have been made on the exchange floor within the last year than in any other year in the exchange's history. The records of Chief Grain

Inspector Powell show that more grain, by 25 per cent, was weighed and inspected in Omaha in 1910 than in any other previous year.—  
F. P. MANCHESTER, *Secretary*.

#### THE BUFFALO CORN EXCHANGE

The grain trade of Buffalo prior to 1906 was associated with the Chamber of Commerce, which was the general commercial organization of the city, representing as it did all branches of local industry. For a long period previous to this the Buffalo grain merchants enthused with a growing pride in their city and realizing the magnitude of the grain business which it enjoyed, determined that Buffalo, like all other large grain centers, should support an exclusive grain organization. Consequent upon this universal desire to boost the commercial interests of the great city of Buffalo and to unite all the representative grain interests of this port under an exclusive association, the Corn Exchange of Buffalo was organized and commenced active operations in April, 1906. At this time the departments of inspection and weighing of grain were assumed by the corn exchange and entire jurisdiction over all matters pertaining to the grain trade were taken by the newly organized body.

At the outset, the corn exchange enjoyed the confidence and respect of her sister grain exchanges and was abundantly supported by the grain trade at large. The Buffalo grain interests teeming with pride in the success of their efforts, have perfected an organization representing an exclusive cash grain market, unsurpassed in the United States. The success of the grain business in this city is evidenced by an increase in the annual working force in the inspection and weighing department of from seven employees in 1898 to thirty-two in 1911.

Buffalo is especially favored as a grain center, it being an undisputed fact that it is the greatest as well as the most available distributing point in the United States, due to the exceptional geographical position which it enjoys and the transportation facilities it possesses, both rail and water. The city located as it is at the foot of the Great Lakes is a magnet between the grain shipping interests of the West and the Northwest and the Atlantic seaboard, being accessible by numerous trunk line railroads of which Buffalo is the terminus. Upwards of fifteen railroads enter the city, rendering the most complete facilities for handling the grain product of

the West and distributing same throughout the East and South. The elevator facilities are unexcelled with a capacity of upwards of 22,000,000 bushels, and at an approximate cost of \$14,000,000. This elevator capacity for receiving grain from lake vessels and railroads and transferring same to canal boats and cars makes a possible transfer capacity each twenty-four hours of 5,500,000 bushels. Also the malting interests of this city represent a total storage capacity of 11,550,000 bushels with an estimated capital of \$6,000,000.

The large transfer elevator capacity and facilities for handling grain, afford a great protection to shippers, especially of corn, which at certain seasons of the year is susceptible to rapid changes in condition. Such grain is cooled, dried and put into merchantable condition for a reasonable charge, thus placing the Buffalo market in an enviable position for the disposal of soft corn, and any other grain which is out of condition. This is partially evidenced by a comparison of the receipts of corn in 1910 of about 37,793,368 bushels as against 31,478,578 bushels in 1909.

Buffalo is also listed among the first cities of the United States for its flour milling industry, which showed an output in 1910 of 4,095,650 barrels, an increase of 695,000 barrels over 1909. During the year 1909 and 1910 the milling industry has been greatly improved and the output increased 8,000 barrels daily, with a total daily output of 20,000 barrels, making it the second milling city in the world.

Taking a resumé of Buffalo's superior advantages as a grain market, it occupies a position unexcelled in this country, which is evidenced by its excellent geographical position, its elevator equipment, its lake and rail facilities for receiving, handling and distributing grain and grain products, and the protection afforded the grain trade through the organization of the corn exchange, which it is the duty and privilege of this and all other grain exchanges to provide.—FRED B. POND, *Secretary*.

#### THE COMMERCIAL EXCHANGE OF PHILADELPHIA

After a successful history of fifty-seven years, keeping in close touch with the domestic and export grain trade of the United States and the exact situation in other countries, and always in the

lead for the greatest advantages of its terminal port, the improvement of the water rail facilities, and the most equitable rates and regulations for traffic, the highest standard inspections of all manner of grains, as well as flour, feeds, hay and straw, together with provisions, the members of the commercial exchange can look back through the dim vista of the past with the greatest pride on the many substantial accomplishments brought about for the advantage of the growing business interests of Philadelphia and the Keystone State, with its busy neighbors, almost entirely through the efforts of this prominent and influential trade organization.

Like many leading commercial associations of the present day, its beginning was of the humblest character, but "great oaks from little acorns grow." For, in the year 1854 a modest coterie of flour and grain men assembled in a small room on the second floor at Second and Gold streets, and after some interchange of opinions, they decided to form a business association, and a tentative constitution and by-laws were adopted. At the next meeting a ponderous leather-bound book was presented, still in the possession of the exchange, in which the first minutes were recorded, and the signatures of the men who were the leaders in this movement are therein contained, as legible as on the day when they were written, and it may be of some interest to note that the penmanship of those times was exceedingly ornate, inasmuch as the signatures of the most conservative of the merchants are replete with really graceful flourishes.

William B. Thomas, the father-in-law of Hunter Brooke, the present head of the well-known malt and grain firm, first a colonel, then a general in the Federal Army, and afterwards Collector of the Port of Philadelphia, presided at these early meetings, and was chosen chairman of the committee to draft the constitution and was installed the first president of the then known Corn Exchange Association; Samuel L. Witmer was made secretary.

For a time the preliminary organization became known as "The Flour and Grain Exchange Association," for it was then simply a combination for the furthering of the retail trade, and many of the great tracts of land which since have made wheat history for the world, were then only known as virgin soil. The telegraph had just rounded its first decade, and the inter-continental cable had not been laid. In those days the grain trade in general had



the romance of uncertainty, and modern speculating in grain is like betting on a sure thing as compared to the reckless way in which Dame Fortune was wooed when the exchange was in its infancy.

For example, a ship would leave this port and put out to sea laden with grain. The consignor did not know what he would get for the cargo. The trip might be an entire loss, or perhaps a snug little fortune was realized. Often times there would be a rumor in this country that there was a famine in Ireland, and as it took a sailing vessel at least two months to make the voyage across the ocean, the distress could be relieved before the ship reached Liverpool.

The skippers of the grain ships were mainly of that sturdy, resourceful type who would frequently be entrusted with selling the grain when the coast of England was reached. If the captain of the craft was not accorded this responsibility, a young man from the broker's office, or a member of the firm listed as a "supercargo" would make the voyage. As sixty days was the average time to sail across the ocean, it was usually an additional month before the consignor could learn what had been the fate of the cargo. During those long, long waits the merchant of Philadelphia controlled his nerves as best he could, haunting the ship offices to glean the thirty-day-old gossip.

But if the news at last proved favorable the profits were often large and the financial harvest added an encouraging zest of adventure to the next cargo which was sent out from the port. But things are different now, for that was over half a century ago. Now the grain and flour, feed and hay are bought in the West and elsewhere by wire, and if the grain goes to England, it is sold by cablegram, and the transportation is frequently arranged by telephone. The shipper knows just how the market stands at every point in the civilized world, and through the up-to-date business progression, the old-time romance of wheat and corn exporting has been completely wiped out of existence.

The initial meetings of the exchange were held at Second and Gold streets, but as the association became strong in membership and influence, a building of its own was erected on the east side of Second street, between Walnut and Chestnut, which was styled the Chamber of Commerce, and was pointed out as the headquarters



of the grain trade to business strangers coming to the city. The exchange occupied the second floor, with offices below, the structure being on the historic ground of the old "Slate Roof" house of William Penn, and when the "Corn Exchange" proposed to build, and William Welsh, at the head of a committee of citizens, secured the property, the Quaker element was shocked as they maintained that a priceless relic was sacrificed. When it was proposed to purchase as far south as Walnut street, the discovery was made that a small portion of land, twelve by sixteen feet, was not covered by original deeds or patents. This proved to belong to the Six Nations, to which it had been presented by the sons of William Penn, when the Indian Chiefs, on a visit to Philadelphia, refused to negotiate a treaty or even talk about it, until they could stand on their own ground and build a council fire on their own land. One of the committee visited the Indian Reservation on the Allegheny River, and was referred to "Colonel Parker," their chief in New York. He confirmed the fact, but said there was no record, a wampum belt having been the confirmation. This belt has since been deposited at Albany, with all the wampum belts of the Six Nations, and said to have been destroyed by the recent fire at the Capitol buildings. Granville Penn visited this plot of ground and knew all about it. The exact location is in the rear of 45 South Second street. The dedication of this new home took place on March 1, 1869, just a year following the change of the name of the organization from the Corn Exchange Association to the Commercial Exchange of Philadelphia, and after an occupancy of nine months a disastrous fire broke out and the building was burned to the ground, the entire fire department of the city failing in their endeavor to save the structure which was of brick.

The next great chapter in the history of the exchange was the movement which brought about the establishment of the American Line of steamships making quick communications between this port and Great Britain; then came the stubborn but successful contest with New York to retain the ruling differentials here, which was a long-drawn period of trade warfare. Before the war Philadelphia had an extensive trade with the southern states, and after peace was declared the main source of supply was in Pennsylvania, Ohio, Southern Delaware and Maryland. This condition, however, was changed by the outreaching of the western trunk lines when the

great wheat and corn belts, west and northwest of the Missouri River, were thrown open.

Thirty or forty years ago 20,000 pounds was considered a maximum freight car load, and all above that was charged as excess freight; now the maximum is easily 100,000 pounds.

In 1854 the grain firm that had a correspondent one hundred and fifty miles away within the country was considered unusually progressive, while now the members deal two thousand miles inland and three thousand miles over the water. With the development of the industry came a change in the class of memberships, which in the beginning covered miscellaneous business. Coal dealers, liquor men, grocers and dry goods merchants have dropped out and those principally interested in cereals are mainly in evidence now. The membership is comprised largely of those handling flour, feeds, grain, hay, straw and provisions, though leading representatives of the banks, railroads, shipping lines, distillers and brewers are still on the roll.

In 1894-5, when the "Bourse" was completed with its mammoth building which extends from Fourth to Fifth streets the length of an entire square, and modeled after its foreign namesake, the only establishment of its kind in the United States, the Commercial Exchange disposed of its stock holdings in the Chamber of Commerce building, and, under President E. L. Rogers, made a lease for their present quarters on the north side of the main floor of the Bourse which they now occupy; and, while for a time some of the veterans in the grain trade looked upon the move of abandoning their old home for a modern leasehold, as an unfortunate move and loss of identity, the great advantages derived in the accommodations and facilities, including telegraphs, tickers, quotation boards, long and short distance telephones, office, floor and sample table space, postoffice, reading, writing and news rooms, with dining restaurant and every known up-to-date equipment and privilege, they have become fully reconciled to its untold improvements and comforts.

The grain inspection department for twenty-five years in special personal charge of Captain John O. Foering, who received all inspection dues and paid his corps of assistants, bringing the character of inspections at this port up to the highest standard, has now become a fixed department and asset of the exchange, whose chief official is William J. Duffy, who occupies a special room in the Bourse building with his deputies.

While the exchange is one of the oldest trade bodies in the country, from time to time at the closing of each year it has thrown its dignity to the winds and lined up the grain men against the flour men in a pitched battle over the grain floor, after call hours, pelting each other most mercilessly with sample bags of grain and flour until one side gained the victory. But reform and progressiveness became popular a year ago, and this ancient but strenuous custom has been consigned to the tombs of the Capulets, and music and song and good fellowship now usher out the old year.

In the early days the annual elections were most expensive and exciting, champagne flowed like water and "green wads" changed a plenty, and cabs and carriages gave free rides to voters from every section of the city. Now, with an occasional exception, this annual affair, which closes with a luncheon, is a veritable "love feast."

Exports of corn in 1900 footed up 33,452,170 bushels, and in 1908 there was shipped abroad 17,061,938 bushels of wheat, and in 1899 the export oats total footed up 7,880,766 bushels; but since Russia and the Argentines have gone into sharp competition for the European balance grain trade, exports here as well as elsewhere have fallen off considerably.

#### THE MILWAUKEE CHAMBER OF COMMERCE

The Milwaukee Chamber of Commerce is one of the oldest exchanges of the West or middle West, and Milwaukee, at one time, as we are fond of recalling, was probably the principal primary market of the country. That proud distinction cannot be claimed for her now, under the changed conditions of transportation, the shifting of population centers and the development of new territory, but Milwaukee, nevertheless, lays rightful claim to many advantages as a market for grain that will ever keep her in the front rank, and there will be in the future an organized and systematic influence at work to keep these advantages and the superior facilities existing in this market, before the eyes of the rest of the world.

Considering Milwaukee as a market to which the shipper may profitably consign his grain, hay and seeds, we are proud of our weighing and inspection departments, and are gratified to know that Milwaukee weights have an enviable reputation for reliability among the trade, as has so often been testified to.

Milwaukee is one of the very few large markets of the country

where the inspection of grain is not under the control of the state. The inspection here is under the supervision of the Milwaukee Chamber of Commerce, and in the fifty odd years that this has been so, no occasion has arisen for placing the inspection of grain in any other hands than those of the chamber of commerce. The department is constantly striving to improve methods and increase efficiency, until there has been evolved an almost perfect piece of mechanism which serves the association of six hundred members, composed of all the varied interests, receiving, shipping, milling, malting, etc., with equal justice and fairness to all.

The improved methods adopted for the sampling and inspection of grain have been the means, during the past year, of attracting buyers to this market, where the grades of grain can be fully relied upon, comparing favorably in this respect with any other market.

#### *Milwaukee as a Market*

Milwaukee furnishes an excellent market for wheat and all the coarse grains. Mills and malting establishments require wheat and barley for manufacturing purposes, and during 1910 approximately 6,000,000 bushels of wheat and 11,000,000 bushels of barley went into local consumption for the manufacture of flour and malt, respectively.

The total receipts of all kinds of grain at Milwaukee during 1910 were 48,355,914 bushels, with two exceptions, viz.: 1898 and 1899, the largest in any year in the history of the city.

Corn and oats are handled extensively here, and a large trade exists with Eastern territory in these grains. An exceptionally good outlet to the East is found in the transit lines across Lake Michigan to Grand Haven and Ludington. Car-ferry and break bulk service in connection with the Pere Marquette and Grand Trunk Railways, is maintained throughout the entire year. The eastern buyer is enabled to receive an official certificate which shows him that the weight of grain being transferred through the elevator of the railroad company on the east shore of Lake Michigan, has been determined under the supervision of a sworn weigher of the Milwaukee Chamber of Commerce.

There is no market more favorably situated than Milwaukee, so far as the cost of freight transportation is concerned, and shippers are given the benefit of the lowest freight rates in having their

grain ultimately placed with the dealer, manufacturer or consumer, either in the western or eastern market.

The railway companies, during the past year, have greatly increased the terminal facilities at Milwaukee, and grain shipments are given preference over nearly all other kinds of freight. Switching arrangements, both locally and to connecting lines, are now perfect and at the least expense to the shippers.

Much has been recently said and written regarding "privilege trading," a form of contract which is used in most all markets, but with certain restrictions or modifications in some.

Trading in privileges is one of the features in this market. It has never been regarded as illegal in Wisconsin, as it has been declared in some other states. In fact, a Wisconsin law of the 1902-03 session asserts:

"That in every purchase or sale, or purchase and sale, and all other transactions by or between members of any lawfully constituted chamber of commerce or board of trade organized under or by virtue of the laws of this state, and in accordance with the charter of such corporation, and the rules, by-laws and resolutions adopted therein, shall be *prima facie* valid."—H. A. PLUMB, *Secretary*.

#### THE TOLEDO PRODUCE EXCHANGE

With its splendid location and almost unrivaled transportation facilities, Toledo stands well to the front among the terminal grain markets of the country. The city can look backward to a glorious past in the annals of grain history, but what is more important, the market is flourishing lustily at present and gives promise of continued growth and development. Reasons why the city at the mouth of the Maumee always has been a big grain center are not hard to find. Twenty-one steam railways draining one of the most fertile agricultural sections on the face of the globe make it the fourth railroad center in the country. Another powerful factor is the magnificent harbor, on whose ample bosom could snugly nestle all the craft on the great lakes without any crowding. There are practically fifteen miles of water deep enough for vessels of maximum draught.

In a number of important particulars, Toledo is really a world's power. It is the center for the milling of soft winter wheat flour,



and leads in this type of grain. As the leading clover seed market, Toledo gets recognition abroad as well as at home.

In the matter of elevators, Toledo is splendidly fortified. While the gross capacity is somewhat less than in former days when wooden houses predominated, the fact that practically all are of modern fireproof construction, shows the storage proposition in a better light. The general impression is that the day of the dangerous frame structure has neared the end. It is a matter of interest that in Toledo, the first iron tank for grain was built. This was in 1894. Recently, concrete has been used with such success that more elevators will be built of this material. To Toledo belongs the credit of successfully experimenting with the movable marine leg for handling cereals and flaxseed.

Toledo is destined to broaden out from practically a strictly winter wheat milling center to a distributing point for spring wheat. Flour men, realizing the advantage of Toledo as a strategic point, are pulling together as never before in an effort to get the market all it deserves in the way of freight rates and other things. Most local mills are realizing the importance of spring and winter wheat blend flours and the demand for local use and shipment to interior points continues to enlarge.

Besides giving Toledo first rank in the world as a market, the trade in field seeds helps the grain business materially. There is a reason why the city plays the leading role in clover seed. Toledo is located in the center of the richest clover territory in the country, the productiveness, it is believed being the result of moisture carried by winds from the great lakes. The local seed market is notable for its exclusive system of trading in futures. In no other market are there transactions in clover futures.



## COTTON EXCHANGES AND THEIR ECONOMIC FUNCTIONS

BY ARTHUR R. MARSH,  
Ex-President, New York Cotton Exchange.

Within the brief space of a little more than one hundred years, cotton has risen from a comparatively insignificant article of commerce to such a position, that to-day it probably surpasses all other commodities in the money values involved in its production, distribution, manufacture, and final delivery in the form of finished goods to the consumer. Though wheat and the other food grains appear to be more immediately necessary to the life of the race, cotton to-day surpasses them in value and consequently in its annual demands upon the liquid capital of the world. Iron and steel are more impressive to the imagination, because of the visible magnitude of the industries required to provide them; but iron and steel fall far behind cotton in their total demands upon the world's credits, in the number of human beings employed in providing them, and in their universal importance in the world's trade. All other textile materials, even wool, have fallen into comparative insignificance by the side of cotton. And every year sees a further increase in the uses and in the demand for cotton, accompanied by an extension of its culture and an increase of its importance in commerce and finance. Nobody knows exactly how much cotton the world already grows and manufactures into fabrics, for there are still great portions of the earth, where cotton is known to be raised on a vast scale, which are either incompletely or not at all covered by statistical information. India, for example, where cotton is known to have been raised and spun since at least eight hundred years before Christ, produces every year a crop about whose magnitude exact information is limited to the portion that reaches the ports, like Bombay, Madras, Tuticorin and one or two others, while the possibly larger quantity spun and woven by hand in the native homes is only inadequately guessed at. There are some reasons for thinking that China is the greatest producer of cotton of all countries, and a recent United

States consular report from Hong Kong puts the possible value of the annual consumption of cotton goods in China, chiefly made by home workers out of native cotton, at the enormous figure of \$1,000,000,000; but the only exact statistics we have as to the production of cotton in China are confined to the few hundred thousand bales annually exported to Japan and other countries. Again, it is known that very considerable quantities of cotton, statistically unaccounted for, are raised in Brazil, Peru, and other South American countries; and that the same is true of Asia Minor. These are the uncertainties; but, turning to what is known by means of trustworthy statistics, we find the sum total of the cotton production of the world attaining vast proportions. The United States alone can be counted on to-day for an average yield of not much below 13,000,000 bales of 500 lbs. weight; India produces not far from 5,000,000 counted bales; Egypt, about 1,000,000; Asiatic Russia gave last year 900,000 bales; China, about 600,000 counted bales; Mexico, about 225,000 bales; Brazil, 220,000 bales; Asiatic Turkey, about 150,000 bales; Peru, 110,000 bales; and other countries not far from 250,000 bales. Here is a total of about 21,500,000 bales of cotton, which may be taken as approximately the annual production of the world at present. And all this cotton, and more, is required as raw material for the world's spindles, the number of which, as enumerated statistically, has risen to nearly 140,000,000. Indeed, the supply of cotton is actually less than these spindles require for full operation. And the value of this cotton in its unmanufactured state is not far from \$1,750,000,000, while its value after manufacture cannot be much less than \$4,000,000,000, and is undoubtedly much more than this before it reaches the consumer.

It is upon the cotton merchants that the duty falls of gathering up every year this great aggregate of cotton, requiring this large sum of money to finance it, from all the various countries where it is produced, and of distributing it in exactly the quantity and quality needed to all the cotton manufacturers of the world, wherever their mills may be situated. It is a current saying of the financial world that "cotton is gold," which means that cotton, no matter where it may be, can always be turned into money at once. No other commodity is comparable with cotton in this respect. And the cotton merchants are looked to for the provision

of all the commercial arrangements necessary to make this possible. They are expected to have ready the money or the credit to pay for every bale of cotton offered for sale, wherever it may be, whether in the smallest interior town of the Southern United States, or in the interior of India, or in the Soudan. They are also expected to be ready to provide any spinner anywhere with the exact quantity and quality of cotton he needs for the manufacture of the particular kinds of goods his mill is equipped to turn out. And not only are the cotton merchants expected to do these things, but they do them. The only limitation upon their achievement arises from an occasional under-supply of cotton or of particular kinds of cotton which spinners would like to have. There is no limitation at all upon their furnishing a continuous market for all the cotton which is annually produced. They have completely covered the earth with a network of commercial and credit connections; they have provided means of practically instantaneous communication between markets and agencies for gathering and disseminating information; they have made the arrangements for buying and warehousing and separating the cotton according to its qualities and for shipping. Their operations are among the most important factors in the daily course of the world's finance. Unobserved they affect the balance of trade of the greatest nations, daily influence the course of international exchanges, produce changes in the interest rates in the great money markets, and sometimes, as during the American panic of 1907, furnish the wherewithal to stay national disaster. Their function is, then, one of the most important in modern commercial and financial life.

In the performance of this function, and in carrying along continuously without confusion of checks or periods of suspended activities this world-wide business, the cotton merchants have found it desirable and even necessary to avail themselves of great common markets. Here they can constantly meet, either in person or through representatives, and not only exchange information, but enter quickly and safely into the multitudinous transactions with each other and with the world at large, which are required in the complicated process of bringing all the cotton of the world into the channels of commerce and insuring that all of it, in the right quantity and quality, shall reach the spinners who need it, wherever they may be. Perhaps it would be more exact to say

that out of the very necessities of the cotton trade, and without conscious purpose on the part of individual merchants or groups of merchants, great common markets have grown up, their location really determined by the economic requirements of the case, and that all considerable cotton merchants, the world over, find it advantageous to make use of these markets in the conduct of their business. Such world-markets for cotton should not be confused with the multitude of lesser local markets, scattered all over the districts where cotton is produced, in which the preliminary gathering together of the various cotton crops is done and which serve as the primary points of distribution. Important as some of these lesser markets are, by reason of the quantity of cotton handled in them, and necessary as they all are, the business transacted in them is at once much more limited and local and of a radically different kind from that done in the great world-markets. In a sense they are merely subsidiary to and dependent upon the latter, and they look to the latter for the real determination of most of the questions which arise in the course of trade. The prices at which cotton is bought and sold in them, for instance, are invariably reflections of the prices which are being made in the continuous transactions of the great markets. The forces of demand and supply do not converge directly upon them, but only indirectly through the great markets. This is not to say that this or that of these lesser markets may not be so largely the source of supply of some particular character or quality of cotton as to give it a kind of authority over the relative price of that character or quality, compared with the general level of cotton prices. But this general level of cotton prices is always determined by the balance of the forces of supply and demand in the great markets. It is in the great markets that, so to speak, the entire cotton consuming world is, through the mediation of the cotton merchants, brought into direct relations with the whole cotton producing world, and that the exchange of the commodity produced by the one and required by the other takes place, if not physically, at least in the sense that the terms of the exchange are there fixed. To such an extent is this true that there is a popular misapprehension, particularly among producers of cotton, to the effect that in the great markets there is some unavowed method among merchants by which the actual price of cotton is

consciously and, as it were, by unanimous consent determined upon from day to day, and that this price is then made the basis of all the operations of the merchants as buyers or sellers of cotton for the time being. Although it would be impossible to get farther from the truth than does this proposition, it yet has wide currency, and in one or another form shows itself in most of the political and commercial agitations with regard to the cotton trade. In real truth, the cotton trade is probably the most freely and completely competitive of all branches of commerce; its course is the most completely determined by the forces of demand and supply, not merely from week to week or from day to day, but it may even be said from minute to minute. As will be shown later, some of the most important functions of the great markets are directly due to the absence of any intended and associated effort to decide what the price of cotton should be. And the influence of these markets upon the buying and selling of cotton everywhere is due simply to the fact that they are known to register infallibly at every moment the exact forces of world demand and world supply which are making themselves felt, and the prices which result from the balance of these forces. They are instantaneously affected by every form of demand that declares itself, whether coming immediately from spinners or from cotton merchants who have a demand from spinners or from yarn and cloth merchants who are able to put through business in their goods or from speculators. They feel just as quickly every increase in the supply, whether from cotton producers themselves, or from merchants who have bought from the producers, or from spinners who find they have on hand more cotton than they can prudently carry for immediate use or from speculators who are ready to sell now what they think they can buy later at a lower price to fulfil their contracts. All the varying conditions of every cotton producing and of every cotton manufacturing country are immediately reflected in these markets; and the course of prices in them is the resultant curve of so incalculable a number of forces that no human mind can hope to do more than forecast it tentatively and in the most general way. And still it remains true that it is the course of prices in the great markets which serves as a guide to all cotton merchants and less directly to all cotton manufacturers and all distributors of their goods in the conduct of their business.



from day to day. And the cotton producer relies upon the same guide; for the humblest cotton grower in the most remote district in the southern states of America will to-day not sell his cotton until he has informed himself of the latest prices in the great markets. Moreover, he is easily able to do this, by reason of the remarkable way in which this information is now speedily and accurately transmitted to every place which has any interest in cotton.

The cotton markets which by force of economic circumstances have risen to the place of great world-markets in the sense just described are New York and New Orleans, in the United States; Liverpool, in England; Bremen, in Germany; Havre, in France; Alexandria, in Egypt; and Bombay, in India. But even between these seven markets there are differences in the degree to which all their economic and commercial functions are developed, and consequently in their relative importance to the trade. In only five—New York, New Orleans, Liverpool, Havre and Alexandria—can it be said that every kind of operation required in the cotton business is continuously carried on; and of these five, two, Havre and Alexandria, have limitations which remove them from the class of first importance. The business of Havre, though fully developed in all its forms, is chiefly confined to serving the needs of France, which is comparatively low in the list of cotton-consuming countries. In Alexandria, all operations are confined to cotton of Egyptian growth, which, though of great importance because of its peculiar qualities, is produced in comparatively small amounts each year and consequently affects only to a moderate extent the general problem of the supply of cotton and the demand for it. On the other hand, Bremen, though a market of the first importance for actual cotton, drawn upon not only by Germany, but also by Austria, Russia, and the smaller countries of Northern Europe, has been prevented by German governmental action from carrying on openly one of the most important forms of trading in cotton, making contracts for future delivery, and as a result its merchants are obliged to rely mainly upon Liverpool and New York for the opportunity to transact an essential part of their business. It follows, naturally, from this incompleteness of function that the market of Bremen is comparatively unimportant as a register of the forces of demand and supply and of the prices made thereby. Finally, Bombay, while the chief market for the



great Indian cotton crop, has not yet adopted in their completeness the methods used by the cotton merchants of the United States and Europe. It deals in a kind of cotton which, though of general value, is of a peculiar quality and much less desirable for spinners than cotton of other growths. Accordingly, the transactions which take place in that market have far less general significance than those of the great Western markets. Thus we are brought to the conclusion that even among the major cotton markets of the world there are only three of the very highest class, New York and New Orleans, in the United States, and Liverpool, in England. It may fairly be said that in these three markets the entire world of cotton is reflected. The entire cotton trade looks to them for guidance from day to day, bases all its operations upon the course of prices established in them, and follows with the closest attention every development in them which serves as an indication of the way in which the balance of supply and demand is swinging or is about to swing.

By reason of the volume of daily transactions in these great markets and of the importance of them to the whole cotton trade, the cotton merchants doing business in them found it desirable many years ago to associate themselves together in bodies corporate, known as cotton exchanges, for the purpose of establishing and maintaining just and reasonable and publicly announced rules, under which all dealings between the merchants should be conducted, and which should serve as a basis to the cotton world generally for interpreting the course of events in the markets themselves. This was particularly necessary because cotton is a commodity requiring a high degree of technical skill in its handling and likely to give rise to all kinds of misunderstandings and even to fraud, if uniform and clearly defined methods of dealing in it are not laid down. In the earlier period of the great rise of cotton to economic importance, let us say, up to the middle of the 19th century, cotton had been merchandised, even in the greater markets, by numerous factors, merchants, brokers, commission-men and other dealers, each following his own ideas and employing such methods as he saw fit with the cotton producers, on the one hand, and with the spinners and his fellow traders, on the other. Hence arose constant costly disputes and much confusion and loss, to say nothing of unjust advantages taken by those who were not too

scrupulous. The very terms of every contract entered into were more or less loose and vague, and it was impossible for anyone in the business to know precisely to what he was committing himself. The first movement to obtain better conditions seems to have been made in Liverpool, where, on April 2d, 1841, there was organized a body called the Cotton Brokers' Association of Liverpool. This association, however, did not include all the dealers in cotton in Liverpool; its membership was confined to the class of persons known in that market as "buying brokers," whose particular business was to select from the available cotton held by merchants the particular requirements of individual spinners and to buy this for the spinners' account. The objects announced by this new organization in the cotton trade were, first, to lay down uniform rules under which the members should do business, both with the cotton merchants and with their own spinner customers; and, second, to enter upon the work of systematically compiling statistics of the available supplies of cotton, both in Liverpool and elsewhere, for the information of the members and of the public at large. This first formal organization of cotton dealers lasted as an independent body some forty years, but was in 1882 merged with the later established general body known as the Liverpool Cotton Association. It is, however, entitled to the credit of having shown the cotton trade the great advantages to be derived from clearness and uniformity of rules, and of having paved the way for that careful and elaborate gathering of statistics which has now reached such perfection that, with the exceptions already noted, the entire world is now covered by the statisticians, and everybody concerned with cotton is able to judge for himself what the available supply is everywhere. So well did the association fulfil its function that for nearly thirty years it was relied upon as the regulator of the cotton trade in Liverpool. But with the constant increase of the spinning industry in Great Britain and the consequent enlargement of the cotton trade in Liverpool, it finally became desirable to organize a larger and more inclusive body, which should have as members all classes of dealers in cotton. The impulse in this direction became the greater, by reason of the many changes in the cotton trade occasioned by the Civil War in America. While this war lasted, the uncertainty of the supply of cotton, the tremendous fluctuations in its price, and the consequent attraction of a purely

speculative class of traders to the cotton market brought into play economic forces hitherto unknown in the trade and made it imperative that all dealers in cotton should seek protection from undue risks in a much wider and more rigid uniformity of methods and rules than ever before. As a result, there took shape in Liverpool in the years just following the American Civil War a more complete organization of the Liverpool cotton dealers; and, in 1870, this became the Liverpool Cotton Association, which still continues to exist as the controlling body in the world cotton market of Liverpool. At first the older association of "buying brokers" maintained its separate identity, but, as has been said above, this was merged in 1882 with the larger body, and since that date there has been but one Liverpool Cotton Exchange.

The same influences that were at work in the cotton trade in England had already made themselves felt in the two greatest cotton markets of the United States, New York and New Orleans. In the early days the merchandizing of cotton in both these markets had been conducted in the main upon the lines of the merchandizing of all country produce. Commission merchants and factors received the cotton from the country, often after having advanced money to the planters to grow the crop, and offered it for sale to spinners or to buyers for spinners or to exporters. Until the cotton was sold, it was carried in warehouses like any other stock of merchandise. Heavy risks were run and heavy charges incurred in handling and distributing each year's crop in this manner. But the disturbances of the Civil War immensely increased these risks, and at the same time forced dealers to adopt various new methods in their effort to reduce these risks as much as possible. The class of "brokers" greatly increased, and all concerned endeavored to find ways to pass on the risks as quickly as possible, aiming to act in the capacity of commercial intermediaries, rather than as speculative merchants in the old sense. Cotton was accordingly passed from hand to hand much more rapidly than before the war and the trade constantly grew in complexity. But this very complexity made more imperative absolute uniformity of rules and practices, in order that confusion and loss might be avoided. So, within less than a year after the formal organization of the Liverpool Cotton Association, the cotton dealers of both New York and New Orleans associated themselves together in cotton exchanges.

The New York Cotton Exchange was granted a charter by the State of New York on April 8, 1871. The New Orleans Cotton Exchange was organized in February, 1871, and was incorporated by the State of Louisiana, on September 19th, 1871. The objects which the founders of these two bodies had in view are well illustrated by the declarations of Section 3 of the Charter of the New York Cotton Exchange, which reads as follows:

The purposes of said corporation shall be to provide, regulate and maintain a suitable building, room or rooms, for a cotton exchange, in the City of New York, to adjust controversies between its members, to establish just and equitable principles in the trade, to maintain uniformity in its rules, regulations and usages, to adopt standards of classification, to acquire, preserve and disseminate useful information connected with the cotton interest throughout all markets, to decrease the local risks attendant upon the business, and generally to promote the cotton trade of the City of New York, increase its amount and augment the facilities with which it may be conducted, and to make provision for the widows and families of deceased members. The said corporation shall have power to make all proper and needful by-laws, not contrary to the constitution and laws of the State of New York or of the United States.

It is hardly necessary to give here the detailed history of the organization of the cotton exchanges at Bremen and Alexandria, and of the cotton section of the Havre Bourse, all inaugurated considerably later than the three great exchanges above mentioned. Bombay, in spite of its character as a world cotton market, has as yet no formally organized cotton exchange. In fact, it may be said that the three exchanges of New York, New Orleans and Liverpool stand by themselves in completeness of economic type, in equipment to meet all the needs of the world's cotton trade, and, consequently, in recognized authority as registering the balance of all the forces of supply and demand as regards cotton. To such an extent is this true that they have now ceased to be simply associations of local cotton dealers in these great markets, and have become representative associations of the entire trade. Their membership now embraces great numbers of persons who are not personally present in those markets at all, and whose immediate business is conducted in all sorts of places, often very remote from the centers themselves. The New York Cotton Exchange, for example, has members not only all over the United

States, but also in every important country of Europe and even as far away as Japan. Yet all these persons make continual use of the great exchanges to which they belong, and base their entire business upon transactions made for their account upon those exchanges.

We are now brought to the matter of the nature of these transactions upon the cotton exchanges which constitute, so to speak, the economic fabric of the cotton trade. And here, before proceeding to detail, it will be well to make clear the fact that, just as there is a primacy among cotton markets, so also there is a kind of primacy among the different crops of cotton produced by various countries. Although all cotton, wherever raised, is of importance, and although some of the smaller crops, like the Egyptian, have particular qualities that give them exceptional value, there is general agreement in assigning to the crop of the United States a place in the economics of cotton that belongs to no other. This is both because of the size of the American crop, more than double that of any competing country, and also because of the character of the cotton itself. Embracing within itself a very considerable variety of qualities, suitable for all but a few of the needs of all manufacturers, American cotton is *par excellence* what the trade calls the "bread-and-butter" cotton of commerce. Wherever there are cotton spindles, even in countries which themselves produce cotton, American cotton is used to a greater or less degree. Other cottons are judged in the main in their relation of quality and price to American cotton.

It is, therefore, in connection with American cotton that the action of the forces of demand and supply is most fully and significantly manifested. The fluctuations of the price of American cotton are, speaking generally, followed not only by dealers in this kind of cotton, but also by dealers in all other kinds of cotton, and by manufacturers and merchants of all kinds of goods made of cotton, as the basis of their business operations. It is not meant by this that the abundance or scarcity of other kinds of cotton is of no importance or has no effect upon the general level of cotton prices. Quite the contrary is the case. But this effect is signalized to the cotton trade through the markets for American cotton, rather than directly through the noted movements of the prices of the other cottons. And, as a result of these commercial facts, the



study of the economic functions of cotton exchanges becomes primarily the study of those exchanges only where American cotton is exclusively or preponderantly dealt in. These are New York and New Orleans, in the United States, and Liverpool, in England. In the first two, only American cotton is bought and sold, either presently or for future delivery. In the last, though Egyptian cotton is traded in for both accounts and almost all other growths of cotton are bought and sold "on the spot," as cotton merchants say, the business in American cotton so far surpasses the business in all other cottons, that the Liverpool market is generally thought of as regards its American section alone. We may go further and say that anyone who understands the rationale of the business in American cotton in the three great markets just mentioned will possess practically all that is essential of the theory and practice of the cotton business to-day.

The essential matters to elucidate become these: What are the essential characteristics of the commodity, American cotton, as an article of commerce? What are the commercial necessities or requirements that have to be met in gathering it together from the wide area in the southern states over which it is produced and in distributing it to those who need it? And what transactions, based upon what principles and governed by what rules, are required upon the great cotton exchanges, in order that they may fulfil the part which they have been described as filling in the economies of cotton? It will, perhaps, be clearest to take up these questions in their order, as this will permit us to follow the logical development of the inherent nature of the matter, to which, rather than to the conscious wit of men, the very existence of cotton exchanges is due.

Cotton is a commodity which, though all of it is destined to the same use, *i. e.*, to be spun, is remarkable for the number of variations of quality which it shows. This is particularly true of American cotton. In this fact there is, fortunately, great economic advantage, because spinners are, by reason of it, enabled to find in each crop just the kinds of cotton which are peculiarly adapted to the manufacture of the immense variety of cotton fabrics now commonly made. Yet this variety of quality fundamentally affects the procedure of the cotton trade and has much to do with determining the rules of the cotton exchanges. It is necessary, then, to



describe it in its main features. It may be said that the variation is of two kinds,—first, length of fibre, or “staple,” and, second, color and comparative freedom from extraneous matter. To the first of these variations the name “staple” is commonly given; to the second, “grade,” or “class.” These require a brief description.

The “staple” of American cotton, omitting the limited special variety of Sea Island cotton, with a fibre of great length and strength, varies in length from about  $\frac{5}{8}$  inch to about  $1\frac{1}{2}$  inches. Every increase in the length of the fibre results in an increase in the value. This is particularly true when the fibre has a length of  $1\frac{1}{16}$  inches or more. From that point every addition of  $\frac{1}{16}$  inch to the fibre adds cumulatively to the price. Though there are no sharply defined geographical limits within which the several varieties of staple are produced, it is true in a general way that the shorter stapled cottons (from  $\frac{5}{8}$  inch to 1 inch in length) are grown in the states on or near the Atlantic seaboard,—North and South Carolina, Georgia, Alabama and Florida. The trade name for these cottons is “upland.” The somewhat longer stapled cottons (from 1 inch to  $1\frac{3}{16}$  inches in length) are produced in the greater part of the Mississippi Valley States and in Texas and Oklahoma, and are known as “Gulf” and “Texas” cottons. Practically all of the long stapled cotton (from  $1\frac{3}{16}$  inches to  $1\frac{1}{2}$  inches in length) is grown in that part of the State of Mississippi called the Delta, lying between the Yazoo and Mississippi Rivers, and in part of Arkansas. These cottons are known as “rivers” or “benders,” because raised on the rich alluvial land in the bends of the rivers. In their relative proportions in the entire annual crop these varieties of staple stand approximately as follows: Uplands, fifty per cent; Gulf, and Texas, forty-five per cent; and extra staples (rivers and benders), five per cent. It will thus be seen that in the trading on the cotton exchanges upland cotton must be given the foremost place, and in fact made the basis for all the trading rules, but that special provisions are required to take care of the more valuable longer stapled cottons.

No matter what the length of staple may be or where the cotton may be raised, it varies in respect to its color and in respect to the amount of dry leaf, dust and other extraneous matter which it shows. In the matter of color three main divisions are

recognized by the trade,—white, tinged and stained. White cotton is that which has opened in the fields and been picked before frost occurs and before heavy winter storms have affected it. The proportion of it in any crop varies greatly with the varying dates of frost and the character of the weather through the picking season. Sometimes almost the entire crop is white cotton; in other years less than half of it. It is generally much more valuable than tinged or stained cotton. "Tinges" are produced by light frosting of the cotton bolls before they open, and have a slightly yellowish, or golden orange color. "Stains" are due to a combination of heavy frost and severe storms, and have a deep orange or tawny color. But, whether the cotton be white, tinged or stained, it always has in it a certain amount of extraneous matter,—dry leaf, specks of dust, bits of husk and so forth. As this matter must be taken out of the cotton before it is spun, and is a pure loss to the spinner, the relative amount of it in any particular cotton affects its value. Consequently all cotton has to be separated into the "grades" which correspond with the amount of such matter shown. These grades have names universally current in the trade, and most of them descended from the early days about which we have little chronicled information. That "grade" which seems originally to have been thought to represent a fair average of quality has, ever since we knew anything of American cotton, been known as "middling." Grades better, *i. e.*, cleaner, than "middling" are called "good middling," "middling fair" and "fair"; those poorer, *i. e.*, dirtier, than "middling" are called "low middling" and "good ordinary." Modern requirements, however, have made it necessary to carry the refinement of sub-division of grade still further, and to establish what are known as "half-grades," and even "quarter-grades" between the above "full grades." The list of "half-grades" above "middling" is in New York "strict middling," "strict good middling" and "strict middling fair"; below "middling" it is "strict low middling" and "strict good middling." The "quarter-grades" recognized in New York are "fully middling," "barely good middling" and "fully good middling" on the ascending scale; and "barely middling" and "fully low middling" on the descending. It should, perhaps, be stated here that there is a slight lack of uniformity between the great markets in the nomenclature of the intermediary grades.

Thus in Liverpool the "half-grades" bear the designation "fully" instead of "strict," as in New York. But the cotton trade is accustomed to these differences, and no confusion arises therefrom. It should also be noted that the range of grading accepted for "tinged" cotton is smaller than for "white"; and that all merchantable "stained" cotton is called "middling stained,"—all "stains" below that grade being treated as unmerchantable. The essential point to bear in mind is that every one of these "grades," "half-grades" and "quarter-grades," as well as each of the colors, has a different value. A further point of importance is that it is the custom of the trade to arrive at these different values by referring always to the current value of "middling" white cotton. This white grade of "middling," therefore, is known as the "basis grade," and the other grades or sub-grades are valued at so much "on" or "off" middling. The scale of the additions to or subtractions from the value of "middling," to arrive at the value of the other grades, is known as the scale of "differences."

At this point it is necessary to mention a fact which is one of the few causes of commercial disturbance and confusion left in the cotton trade. This is that it has not yet been possible to bring about complete uniformity of practice in all the markets for American cotton with regard to the very essential matter of exactly what constitutes each grade and sub-grade of cotton. As there is not yet any formal and imperative standard of cotton grades in the world, a very considerable variation is found between market and market, section and section. What is called "middling" in Augusta, Ga., is very different from and much higher than the "middling" of Savannah and Charleston. The "middling" of Texas is nearly one-half grade better than the "middling" of New York and fully one-half grade better than the "middling" of Liverpool. The grades of New York do not correspond with those of Liverpool or Bremen or Havre, nor with those of many of the spinning centers in New England. Expert cotton merchants are, of course, familiar with these variations and can make allowance for them, but they undoubtedly are a source of confusion all the time. And there is the more of this because many of the markets allow their grades to vary somewhat from year to year, according to the character of the successive crops. It may be said that the New York Cotton Exchange is the only great market in the United

States that has held without variation to a fixed standard of grades. This standard was adopted by a convention of all the important cotton exchanges in the country in 1874 and immediately put into effect by the New York Cotton Exchange, being rigidly adhered to by it ever since, though the other exchanges unhappily fell away from it almost at once. Within the past three years the United States Department of Agriculture, acting under a law passed by Congress, has caused a standard set of grade types to be made by a commission of cotton experts; but these types vary materially from what are accepted generally in the trade as the different grades, and are as yet incomplete in that they represent only Texas and Gulf cotton and not uplands and do not include the lowest grades of merchantable cotton. Consequently, they have not yet been widely adopted. Properly supplemented, however, with what is now lacking, these types could with great propriety and to the advantage of everyone be put into effect, in the United States at least. At the present moment, however, it is an unfortunate fact that a high degree of technical skill is required to know what is really meant by "middling" and the other grades in all the various markets for American cotton.

Having thus described the essential characteristics of the commodity, American cotton, we may now pass on to the commercial requirements that have to be met in the course of gathering it together, merchandising it and distributing it. To begin with, cotton must be bought and gathered together in the southern states, just as it runs, "in gross," as the French say; and it must be merchandised and distributed "in detail," to use the French expression,—that is, in accordance with the particular needs of particular spinners all over the world. The cotton planter wishes to sell his cotton just as Nature gives it to him, in all its grades and qualities at once. He has no information about the various markets for the different kinds of cotton. He knows only in a general way the relative values of these different kinds. It is the business of the cotton merchant to buy this cotton just as it is offered by the planter,—high grades, low grades, varying colors, varying staples, all together,—and then to find for each quality its appropriate purchaser among the spinners. The cotton merchant has to know not merely the current value of cotton "in gross," but also the values of all the separate qualities upon which the composite

"gross" value is based. And the requirements of individual spinners are just as detailed and specific as the offerings of the planter are miscellaneous. Generally speaking, every mill is arranged for the use of only certain qualities of cotton, suitable to the particular goods being manufactured by it. Other qualities, even though superior in point of market value, may be practically useless to it. Thus a mill arranged to spin upland cotton can generally do nothing whatever with bender cotton. To a certain degree the same is true of the different grades; what is advantageous in one mill involves a loss in another. So the cotton merchant must be familiar with what his various spinner customers need and must be ready to supply this out of his gross purchases in the South. Here at once a difficulty presents itself. The merchant, buying, as he must, all grades and qualities, may have an immediate market with spinners for only certain of these grades and qualities, and thus may have left on his hands for an indefinite time the superfluous cotton he has been obliged to buy along with what he really wanted. So long as he cannot sell this additional cotton, his "overs," as they are called by the trade, he must bear the risk of a decline in its value, unless he can find some way in which to protect himself. As will be seen later, this inescapable risk and the device of the trade for insuring against it, have had more than anything else to do with making the great cotton exchanges what they now are. Nor is this particular risk the only one the cotton merchant must take in order to meet the needs of his spinner customers. For the spinners not only desire to buy from the merchant cotton that precisely meets their needs; they also wish to buy it in various different ways that will suit their convenience. For example, they are in the habit themselves of contracting for months ahead the output of their mills, and they desire to buy their cotton for delivery to them from month to month as they will require it. They look to the merchant to be ready to enter into such a contract for the future with them, instead of shipping them at once cotton which he actually has on hand. Such contracts for the future delivery of cotton to spinners are made in great numbers, running months and even years ahead, requiring for their fulfilment sometimes cotton not yet grown. Thus the merchant continually finds himself in the position of having on hand cotton for which he has no immediate sale and at the same time of being under con-



tract to spinners for the future delivery of cotton which he has not bought. No one unfamiliar with the cotton trade can conceive of the number, magnitude and complexity of these operations, which are required by reason of the world-wide character of the business of supplying all mankind with cotton fabrics and with cotton to make them of. But, obviously, the risks involved in all this are very great indeed. When it is remembered that the annual supply of cotton is entirely a matter of Nature's bounty; that from one year to the next there is often a variation of twenty per cent or more in this supply; that the effect on the price of cotton of superfluity one year followed by scarcity the next, is such as to produce fluctuations at times of nearly one hundred per cent in its market value;—when all this is remembered, it will be understood how severe are the risks that must be undergone by those who gather it together, merchandise it and distribute it. Were it not that a way has been found, through the use of the great cotton exchanges, to insure against these risks, it is certain that the whole conduct of the cotton business must be different from what it is, and that the certainty, ease and convenience with which the world is now kept supplied with its cotton would be unknown. And the world would suffer not only in the matter of cotton itself; it would be profoundly disturbed in all kinds of ways as regards international commerce and finance. It would be difficult to comprehend in one statement all the economic evils that would result from removing so immense an industry as the cotton industry from the field of safe calculation and undertaking for the future.

Fortunately, any such changed condition of things need not be contemplated, unless, indeed, certain busy but ignorant political agitators should meet with a success beyond probability. As has been indicated above, there has been evolved with the course of years a method of employing transactions upon the great cotton exchanges as a means of insuring against these immense aggregate risks; and, economically speaking, this method is one of the most interesting developments of modern commerce. A description of the transactions upon the cotton exchanges, and of the rules that govern them is, therefore, now in order.

In their inception the markets where the great cotton exchanges are now situated were, of course, simply places to which, by reason of the geographical, commercial or financial advantages they



possessed, considerable quantities of cotton came to be merchandised. The buying and selling of cotton physically in the market, "on the spot," as the trade puts it, was until some forty years ago the exclusive cotton business of these places. About this business in cotton "on the spot" customs of the trade grew up, gradually assuming the shape of formulated rules, which were generally recognized as binding on all dealers in the markets. Such a custom of the trade was that the common unit of trading in cotton "in gross," and to some extent "in detail," should be one hundred bales. Other customs had to do with the way in which the seller should deliver his cotton to the buyer, and the buyer pay for it, or with the manner in which the grade or grades of the cotton should be ascertained and valued; or with the identity of the cotton and the certification of its place of origin; or with the warehousing and insurance; or with the settling of differences between traders; in short, a long list of matters of everyday occurrence. Later, this body of customs and rules about cotton "on the spot" was to serve as the foundation for the whole scheme of rules of the modern exchanges. And to this day a most important portion of the business of the exchanges themselves is trading in cotton "on the spot." New York, New Orleans and Liverpool still remain among the most important "spot markets" for American cotton in the world. And the merchants associated in the exchanges have adopted most comprehensive and yet detailed rules to govern their transactions in "spot" cotton. Uniformity and fair play are secured at every point in the delivery and receipt of such cotton, and in the payment for it and the passage of the title to it. Many members of the exchanges make dealing in it their exclusive business. And, yet, it has become in a sense not the main business of the exchanges, but subsidiary and ancillary to this main business. It may almost be said that as the main business of banks to-day is not dealing in money, but in credits; so the main business of the cotton exchanges is now in credit transactions in cotton, towards which the actual cotton "on the spot" stands in much the same relation as the money in the banks to the sum total of their transactions in credits. It serves as a reserve at once for the satisfaction of unliquidated credit balances and for the maintenance of sound values in all the credit operations. This, however, will not be clear without a more detailed

account of these credit operations themselves; and this we are now ready to undertake.

The name given to the credit transactions in question is "contracts for future delivery," or colloquially, "futures." For the complete understanding of the nature of these and of the part they have come to play in the economics of cotton, some knowledge of their history is necessary. We first get traces of them in their tentative forms in the period including and immediately following the American Civil War. As is generally known, the Civil War occasioned an enormous rise in the price of cotton outside the Confederate States, and also tremendous fluctuations in the price. In England, particularly, the constant scarcity of cotton and the uncertainty of the supply led to constant violent changes in the market. Such a condition of things invariably brings with it a craze for speculation in the commodity affected. And cotton was no exception to the rule. Among other expedients made use of by the English speculators was that of contracting for the purchase of cotton known to be on shipboard directed to England. Such cotton was known as cotton "to arrive," and the making of contracts for the delivery of this cotton "on arrival" became a leading feature of the Liverpool market before the close of our Civil War. Needless to say, these contracts were not bought and sold merely once against a given cargo of cotton, but over and over again at the varying prices of the market. Speculators quickly saw that such contracts afforded them certain advantages as compared with cotton "on the spot." For one thing, they did not have to find the actual money to pay for them, as they did for the actual cotton. Then they had, or seemed to have, no warehousing and insurance bills to pay on them. So the tide of speculation turned largely in the direction of these contracts. As time went on, they were slightly modified in form, as shippers of cotton began to calculate that they could count on the arrival of their cotton at least within a period of two months. So contracts were made for the delivery of cotton to arrive within two specified and coupled months,—as, for example, October-November, January-February, July-August. In the late 60's, the making of such contracts had become a common practice; and little by little, the association of such contracts with certain specific cotton on specific ships died away and was replaced by the notion that contracts might be made for the deliv-

ery of cotton in any coupled months in the future and, when the months came around, might be filled with any cotton then available. Here was the contract for the future delivery of cotton, as we now know it, fully developed and formulated.

In the United States much the same forces were at work as in Liverpool, though to a greater extent in New York than in New Orleans. During the Civil War itself the cotton traded in by New York merchants was chiefly contraband cotton, seized by the Government and sold to merchants and speculators. Soon after the war, however, the practice of dealing in cotton, not only "on the spot," but "to arrive" from the South, became prevalent in New York. As it was possible to forecast the arrival of this cotton within a single month, the contracts made against it specified but one month for the delivery instead of the two coupled months of Liverpool. So the New York contracts from the start have called for May delivery or July delivery or October delivery, and so on, rather than May-June, July-August or October-November. When this manner of trading had been once entered upon, it developed with great rapidity, and by 1869 various New York merchants were making straight-out contracts with spinners and with their fellow-merchants, calling for the future delivery of cotton in specified months. And, precisely as in Liverpool, these contracts came to be traded in by both dealers and speculators, being passed from hand to hand at the varying prices of the market or being replaced by new contracts at new prices according to the convenience of the traders. By means of these contracts a given lot of cotton might pass through the hands of a large number of persons before being finally delivered to someone having immediate need for it. Furthermore, these contracts gave to the whole market a continuous flexibility and responsiveness to new conditions as they arose, which had been unknown and impossible in the days of simple merchandising. The importance and the influence of the New York market grew very rapidly after this new form of trading was inaugurated. On the other hand, New Orleans contented itself for some years with dealing in cotton "on the spot," because the natural flow of cotton to that market from contributory territory was so great as to provide abundant business for all the dealers there. It was not until some ten years after the system of trading in contracts for future delivery was

fully developed in New York that it began to be adopted in New Orleans.

So far, we have not touched upon the most important of all the uses to which contracts for future delivery came to be put, first in Liverpool, then in New York and later in New Orleans, by dealers in cotton. This use is what is technically known as "hedging" to protect engagements in actual cotton and to insure merchants against loss in such engagements. The inception of this practice was such a novel and far-reaching departure from previous custom as to justify quoting what the writer has said elsewhere about it.

It was two or three years after the Civil War that this new conception of the cotton business took shape in the mind of one of the most brilliant cotton merchants the world has ever known, the late Mr. John Rew, of Liverpool, whose firm is still in existence. In 1868 or 1869, Mr. Rew saw that the newly laid Atlantic Cable made it possible for a cotton merchant in Liverpool to ascertain with unheard-of quickness the price at which actual cotton could be bought in the southern states and the approximate date at which it could be shipped to England. He saw, also, that if the price that was being bid in Liverpool for "cotton to arrive" was high enough to enable him to buy the cotton in the South and sell contracts for this same "cotton to arrive" in Liverpool, two or three months later, he could enter into the transaction with entire safety, as when his cotton reached Liverpool, he could either deliver it to the parties to whom he had sold the contracts; or, if some spinner was willing to pay a higher relative price than the holder of the contracts had agreed to pay, he could buy back his contracts and sell the cotton to the spinner with the larger profit to himself. Here was a method, then, by which Mr. Rew or any other importer of cotton into Liverpool could relieve himself of the great risks attending the handling of a commodity which had become highly speculative, and go serenely about his business of importing cotton into Great Britain, able to make a fair profit on every importation, and yet always able to work on a much narrower margin than any of his old-style competitors, because they were carrying the merchant's risk, with its alternate profits and losses, while he had only profits. The immediate and large success obtained by Mr. Rew in his new way of conducting the cotton business attracted the instant attention of the ablest cotton merchants both of Liverpool and New York; and when a year or two later (in 1870 and 1871, respectively), the Liverpool Cotton Association and the New York Cotton Exchange were organized, the best men in the trade had adopted the new scheme as the basis of their business.

It is certain that in the early days of "hedging" neither its

inventor, Mr. Rew, nor his imitators at all realized the full economic possibilities or even the true economic basis of the new method. They did not, for example, think of "hedging" as more than a device by which the cotton merchant could make use of the natural propensity of speculators to buy for an advance in price, turning this into a form of protection or insurance for themselves against a decline in the value of their unsold stock of cotton. To them the cotton merchants were always on one side of the game and the speculators on the other. So general was this conception of the matter that for many years the great exchanges were denominated "the speculative markets"; and many persons both in and out of the trade looked askance upon the use of them, holding that the transactions there were necessarily, on one side at least, in the nature of gambling. Indeed, this notion has not even yet entirely died out, as is evidenced by what is said of the cotton exchanges in much of the public discussion of them. And some truth would probably have to be allowed in this contention, had "hedging" remained exactly what it was at the start. But it was speedily seen that it is just as feasible to protect oneself against loss in a transaction in cotton or cotton goods extending into the future by *buying* contracts for future delivery as "hedges," as it is to insure oneself against a decline in the price by *selling* contracts as "hedges." As soon as this was observed, there began to be buyers of contracts for future delivery on the exchanges who were not speculators at all, but merchants or manufacturers desirous of engaging themselves for the future, but unwilling to speculate on the rise or fall of the price of cotton. And these "hedge" contracts, both on the part of the merchant who sold them and on that of the manufacturer or merchant who bought them, were regarded from the start as primarily *credit* transactions, to be liquidated as such, whenever in the course of business their protection was no longer required. To be sure, they could be turned into transactions in actual cotton by anyone so desiring; but it was found that out of the multitude of transactions of this kind only a small percentage were finally treated in this way. In short, just as few persons call for actual gold at the bank against bank-notes or checks, though the gold must always be there for anyone who wants it, so few buyers of cotton contracts call for the actual cotton and few sellers deliver it, unless abnormal conditions arise, and then



the working of the natural laws of commerce always draws enough cotton to the market to supply the actual need. The ease and rapidity with which such credit transactions could be entered into, even by persons at a great distance from the markets, but represented there, caused this use to extend very rapidly. And steadily the proportion of them increased in which merchants or manufacturers were on both the selling and the buying side, so that the speculator became only one factor in the market out of many, instead of being, as at first, the only factor on one side. It is probable that to-day the speculator is interested in less than twenty-five per cent of the contracts made on the great exchanges at any time; and for long periods of speculative inactivity he is engaged to a far smaller extent than that. Few persons not actually conducting business on the great cotton exchanges can have any idea of the way in which the whole cotton world is centered in them through the development of telegraph and cable facilities to meet this new universal use of transactions in these credit contracts for future delivery for "hedge" purposes. Directly from the floor of each of the three chief exchanges the lines run to every part of the globe where cotton is dealt in. And a continuous stream of orders to buy and to sell contracts pours in over these lines from cotton merchants and cotton manufacturers or their agents everywhere. The "hedge" contracts which a cotton merchant in San Antonio, Texas, sells against 1,000 bales of cotton he has just bought may be bought as "hedge" contracts by the representative of a cotton manufacturer in New England, or Italy, or Russia, or of an importer of cotton goods at Shanghai, as insurance on some engagement for goods stretching on into the future and not yet covered with the necessary quantity and quality of actual cotton. Of course, the speculator plays his part too, and often furnishes the motive power for changes in the level of prices; but the volume of his transactions is insignificant in comparison with these others just described.

There now remains one further matter in connection with the economic theory of "hedging" in cotton which should be somewhat elucidated. It has already been stated that it is the custom in the cotton trade to arrive at the value of all the different grades of cotton by referring them to the value of the basis grade, middling. By an extension of the same principle it is taken as funda-



mental that the value of the basis grade, middling, itself will remain in every market substantially on a parity with its value in every other market. This does not mean that the price will be the same in all the markets, but that after making due allowance for the freight, insurance and other charges necessary to move cotton from its place of production to the various markets, the price will be substantially the same in them all, subject always, of course, to the moderate and temporary fluctuations of parity caused by greater or less pressure of demand or of supply in these markets. Thus, the cotton merchant at any point in the southern states knows what basis middling cotton is normally worth in his immediate vicinity as compared with its value in New Orleans or New York or Liverpool. So, too, the cotton merchant or manufacturer in Germany or Austria knows the relative value of cotton delivered to him and of basis middling cotton in all the great exchanges. In the same way the values of all the different grades and qualities of cotton everywhere, though, of course, fluctuating somewhat from season to season according to the demand for and the supply of each, may always be referred to the value of basis middling cotton on the great exchanges. In other words, all cotton, wherever it may be and whatever its quality, is regarded as part of a great common store having a substantially similar value in all the markets. This being so, the merchant in San Antonio, Texas, does not hesitate to enter into a credit contract in New York, as a "hedge" against his cotton in San Antonio, provided the parity of prices is normal. He knows that whatever he may do with his cotton or wherever he may ship it, the value of it will remain substantially on a parity with his "hedge" contract, and that, when he sells his cotton to someone else at any level of prices the market may have reached meantime, he will be able to buy back his "hedge" contract at this parity of price. As a result of this principle, the cotton trade looks upon all the cotton, scattered all over the world, which is hedged in the great markets, as constituting the stock of cotton of those markets, even though only a few hundred thousand bales out of millions may be physically in the warehouses of those markets. A further effect is to give great fluidity and mobility to this total supply of cotton and to cause it to flow at once, by means of transfers of "hedge" contracts, to those markets in which the demand is relatively strong or the

supply relatively low. Thus, the San Antonio merchant knows not only the normal parity between his home market and New York; but also the normal parity between New York and Liverpool; and, if, after having sold his "hedge" in New York, he finds that a strong demand has shown itself in Liverpool, causing the price level there to rise above its normal parity with New York, he promptly buys in his contract in New York and sells it at the higher relative price in Liverpool. The reverse is done by the buyer of "hedge" contracts in one market, when prices there go above a parity with the others; he sells out his now relatively high priced contracts and buys lower priced ones in the market which is lagging. In this way there is a continuous flow of contracts from market to market, involving in the aggregate transactions in tens of millions of bales every year, or far more than the entire crop. Indeed, there are merchants who largely devote themselves to simultaneous transactions in contracts in two or more markets, buying in the cheaper and selling in the dearer, and making their profit out of the gradual readjustment of the parity. Such merchants are called "arbitrageurs," or, more colloquially, "straddlers," and their operation is known as a "straddle." Their function is a highly important and useful one in the trade.

There remains only to state what is the nature of this contract for the future delivery of cotton, which has come to be used so universally by the cotton trade for "hedging" all its operations and so insuring itself against losses occasioned by fluctuations in the price of cotton. It is necessarily a contract for cotton "in gross," just as the merchant has to buy it from the planter, and it is consequently a contract upon which any and all grades and qualities of merchantable cotton may be delivered. The values at which other grades or qualities are deliverable are invariably obtained by reference to the basis grade, middling white upland cotton. The method of determining these values, or "differences on or off," varies between the three great markets, and there has been considerable controversy of late as to the proper theory to follow. In New Orleans, the differences are fixed from day to day in accordance with the prices made in the local spot market by the demand for and the supply of the various grades and qualities. This method has the disadvantage of causing alterations in the parity between the value of the basis middling contract and cotton

already hedged, sometimes to the loss of the merchant holding the cotton. In Liverpool, the value of each lot of cotton tendered for delivery, relative to middling uplands, is determined by members of the trade acting as arbitrators, subject to the final decision of an appeal committee. This method has the disadvantage of producing great inequalities in valuations and of making it practically impossible to calculate in advance what a given lot of cotton is worth, relative to middling. In New York the method is to determine early in each season through a large committee of experts what the "differences on and off" shall be for the rest of that crop, account being taken of the probable supply of the various grades and also of what experience has shown to be the approximate relative value of each of these grades to spinners. The disadvantage of this method is that there may be miscalculation of the probable supply of the various grades, resulting in a temporary disturbance of the parity between the value of contracts and the general value of middling. The great advantage, however, believed by most New York merchants to more than offset the disadvantage, is that after the "differences" have once been fixed, absolute calculability is obtained, enabling every merchant everywhere to know exactly what he is doing, when he enters into either a credit transaction or one in spot cotton in New York. In the long run, too, provided the "differences on and off" are kept at approximately the relative values of the various grades to the spinner, temporary departures from parity of contracts with middling will rectify themselves. Indeed, it is probable that the ideal way to determine the "differences on and off" for the various grades would be to conduct ample mechanical tests in mills and textile schools, getting the average out-turn of yarn from each grade and fixing the "differences" once and for all by the results of these tests. Something of this kind seems to be probable in the near future.

Such is the contract for the future delivery of cotton which to-day is used by all non-speculative cotton merchants as a "hedge," and which more and more the spinners of the world are employing for the same purpose. It is unnecessary here to go into the details of all the rules adopted by the merchants associated in the exchanges to govern these transactions. Suffice it to say that they are all designed to produce absolute uniformity, fairness and open-

ness between dealers in cotton. As has been indicated before, these contracts made under these rules to-day form the very foundation of the cotton business. Until some better way is found of distributing and insuring against the immense risks involved in merchandising a commodity whose price must fluctuate widely, according as nature is bounteous or niggardly, the cotton exchanges must remain indispensable in the economy of modern commerce.

## FINANCING OF COTTON

BY JOHN J. ARNOLD,

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*The Farmer.*—The conditions of the farmers or producers of cotton vary considerably in the several cotton states. In some localities the farms are small, consisting of from five to ten acres and upwards, while in other localities large cotton plantations consisting of from five thousand to twenty-five thousand acres each are owned and controlled by corporations or syndicates. Nevertheless the financing of the farmer, that is the worker of the soil, is done in very much the same way. In localities where the smaller farms prevail many of the owners or lessees, as the case may be, are people of comparatively small means, and it is necessary in many cases that they be furnished financial aid to tide them over the period from seed time or even before to the time of the selling of the crop. This is done through the local merchants, who make advances by means of furnishing the farmers with the necessities of life to the extent of from thirty to forty per cent of the estimated value of the cotton which the farmers are likely to produce. The merchants in turn find it necessary to borrow from their bankers, and naturally charge their customers a rate of interest higher than that which they are called upon to pay, the transaction therefore netting them a profit to which they are entitled considering the risk which they assume.

The raw cotton when picked and before ginning is brought to the local merchants who have made the advances, who weigh the same and give credit on their books at the market value. At the end of the season when the farmers have delivered all of their cotton the accounts are squared and the farmers paid in actual cash the amounts due them. In the event that a farmer is in a financial condition so that he does not require the assistance of the merchant he usually takes his cotton direct to the gin and has the same ginned and baled, paying the gin for the operation, selling his cotton to a local cotton merchant and the seed to an oil mill, or leaves his cotton in storage to be sold by the merchant for farmers' account. In either event the gin issues what is known as a gin receipt, against the pro-

duction of which the cotton will eventually be delivered. In the case of the cotton plantations owned by corporations or syndicates the same procedure takes place. The plantation is sub-divided into small sections which are leased to farmers, either on the basis of a fixed charge per acre or on the basis of a percentage of the actual production. In place of the local merchants, however, general merchandise stores owned by the plantations supply the farmers in a like manner as do the merchants in the localities of the smaller farms. In such communities the gins and oil mills are owned and operated by separate corporations or individual owners as the case may be, while each plantation usually has its own gin and mill. During the active season of the year the corporations owning the plantations also are liberal borrowers from their bankers.

The above covers the financing of the cotton crop to and from the soil to the gin and oil mills.

*From Gin to Compress.*—After the seed has been removed at the gin the cotton is baled in packages of 28 x 56 x 42 inches in size, weighing approximately five hundred pounds, including twenty pounds bagging and steel straps, thus having a density of about fourteen pounds per cubic foot. In this condition the cotton is bought by cotton buyers for export or for delivery to American mills, the seller delivering the same to a railroad or compress point, where the cotton is sorted according to grade, compressed and marked, the size being reduced to 28 x 56 x 18 inches, giving a density of from twenty-eight to thirty pounds per cubic foot.

*Shipping on Consignment.*—In many instances the cotton is merely sent on consignment to cotton factors, who put the same in storage, making an advance of possibly sixty to seventy-five per cent of the market value, and when the cotton is finally sold the cotton factors are reimbursed for the amount advanced plus interest, insurance and storage charges, and the balance is remitted to the shipper.

*Financing the Cotton Factors.*—While the cotton factors are usually of strong financial standing they necessarily must be heavy borrowers during the cotton season on account of the large advances made by them on cotton stored in their warehouses, and although they do not own the cotton outright, their bankers as a rule do not hesitate to make loans, taking the stored cotton as security.



*Financing the Cotton Buyer*

When cotton is bought the same is paid for in cash, which is usually accomplished in the following manner:

*Cotton Bought at Gin.*—The cotton buyers make arrangements with the local bankers where the gins are located, for the payment of the cotton, the banks furnishing actual cash against tickets issued by the buyer's representatives, holding the tickets in question as their collateral in the meantime. When a sufficient amount of cotton has been accumulated the local banker at the request of the buyer's agent delivers the tickets in question to the local agent of the railroad, who in turn issues a bill of lading covering the shipment to compress point, which then is attached to the draft drawn by the buyer's agent upon the buyer's head office, which draft includes the price paid for the cotton plus interest and exchange charged by the local banker, who is reimbursed by the amount of the draft thus drawn. When this cotton is ready for export local bills of lading covering shipment from point of origin to compress point are exchanged by the cotton buyer's banker for local bills of lading to port or for through bills of lading.

*Cotton Bought at Compress.*—When cotton is bought at compress points, compress receipts instead of tickets are delivered to the local banker, who pays for the cotton as purchased by the buyer's representatives from time to time. When a sufficient amount of cotton is ready for shipment the compress receipts are exchanged by the banker for local bills of lading to port or through bills of lading as the case may be. These bills of lading are attached to the draft drawn by the representatives on the head office of the buyer, the local banker being reimbursed for the amount thus drawn.

*Concentrating Cotton.*—Owing to the fact, however, that cotton to go abroad in one shipment is usually bought by representatives of the buyers in different sections of the country, much of the cotton itself is frequently allowed to lie at concentrating points until a sufficient amount of the particular grade desired has been secured. It therefore becomes necessary for the cotton buyer to borrow heavily from his local banker with whom he has arranged for a line of credit, which is given to him in the form of an overdraft or against demand notes, against which the banker holds the bills of lading which have come forward attached to the drafts drawn by the buyer's representative. To illustrate: A cotton buyer

in Dallas, Texas, has representatives who are buying cotton at Bowie, Weatherford, Cisco and McKinney, Texas, this cotton to go abroad in one shipment. Let us say that the cotton is shipped from the various compress points to port on local bills of lading which come forward to the Dallas banker attached to the drafts drawn on the Dallas buyer. Naturally, cotton being shipped from various points would reach port at different times, but none of it can be realized upon until the entire shipment is completed, thus necessitating the tying up of considerable funds which have been advanced by the Dallas banker. When sufficient cotton has been received, the local bills of lading held by the Dallas banker are forwarded to his banking correspondent at the port and there exchanged for port or ocean bills of lading, which are issued by the steamship companies upon the actual delivery of the cotton. Such port or ocean ladings are then forwarded to the Dallas banker. The Dallas buyer, who now becomes the seller or exporter of the cotton, draws his draft on the reimbursement furnished by the European buyer in the currency of the country in which the reimbursing bank is located, and the draft having been sold to a foreign exchange banker, say in Chicago or New York, is delivered to the Dallas banker, together with a draft on the Chicago or New York buyer of the exchange, in United States currency, to which then are attached the port or ocean bills of lading, insurance certificate, etc., thus reimbursing the Dallas banker by the amount of the draft so delivered.

*Concentrating Bills of Lading.*—Or it may be that instead of securing local bills of lading from the compress points to port, through bills of lading have been secured, in which event the bills of lading in question are concentrated at Dallas while the cotton goes direct to port for shipment abroad. In this case the Dallas cotton buyer draws his draft on the European reimbursement in a like manner as above, but instead of port bills of lading, through bills of lading are attached, which latter cover the shipment via a stated railroad and steamship company. In the event that ginned cotton is delivered at a compress point which is also a concentrating point, the local bills of lading attached to the drafts drawn by the buyer's representative are delivered by the buyer's banker to the compress, and the banker receives in lieu thereof compress receipts which he holds as collateral against the buyer's obligation caused by the bank having honored the draft drawn against the shipment to the buyer's

debit. When the cotton in question is ready for shipment, the bankers have the compress receipts exchanged for port or ocean bills of lading, the further financing being done in like manner as when cotton is shipped from outside compress points direct to port.

*Cotton Sold to American Mills.*—In the event of a shipment of cotton going forward to American spinners, practically the same method of financing is employed with the exception that the cotton buyer, who now becomes the seller, draws his draft direct on the mill in United States dollars instead of on the European reimbursement in foreign currency, eliminating, of course, the foreign exchange buyer entirely.

#### *Financing Exports*

Covering the drawings against cotton exports, three principal methods of reimbursement are employed: Bankers' unconfirmed credits, consignees' acceptances (documents delivered against payment) and spinners' acceptances (documents delivered against acceptance).

*Bankers' Credits.*—By far the largest percentage of cotton is exported under bankers' unconfirmed credits. At the beginning of the cotton season the European buyer usually makes arrangements with his bank or banks for a line of credit up to the limit of which the banks in question agree to accept drafts drawn by the American exporters against cotton shipped for account of the European buyer in question. Such drafts are usually drawn at 60d/s, 90d/s and in some cases 180d/s. When the European buyer of the cotton makes a contract with an American exporter covering a given number of bales of a specified grade, he at the same time notifies the American exporter of the name of the bank upon whom the draft is to be drawn. Such drawings are always purchased by the American foreign exchange buyer with the understanding that the documents are to be delivered to the drawee bank against its acceptance. After such delivery of documents the American foreign exchange buyer does not look to the cotton as collateral, but holds the accepting bank and the drawer of the bill responsible. The European bank, of course, holds the shipping documents under which it has absolute control of the cotton. In most cases, however, the same are delivered to the European buyer upon arrival of the ship and the cotton

is frequently delivered to the spinners to whom the same has been sold by the European importer or buyer and paid for before maturity of the acceptance under which the same came forward. The European buyer, of course, is called upon to pay the European bank a commission for the credit in question. Under this method of bankers' unconfirmed credits, the entire transaction, in so far as the European buyer of the cotton and his bank are concerned, is based wholly upon credit, no funds whatsoever being advanced by either of them. The American foreign exchange buyer, who has advanced actual cash, or its equivalent, however, does not find it necessary to tie up his funds for any length of time unless he desires to do so. European discount houses and banks, other than the one upon which the particular draft in question is drawn, usually are eager bidders for the discounting of such bills, and the American foreign exchange buyer receives by cable daily quotations at which bills going forward within a specified time can be discounted. Let us say, for instance, that a foreign exchange buyer in Chicago, on the morning of a business day, makes a bid for a draft drawn at 60d/s upon a London bank covering a shipment of cotton amounting to say £10,000 sterling. The following points must be considered.

The rate of exchange at which a demand draft on London can be sold:

- English stamp charges.
- Cost of collection.
- Rate of discount abroad.
- Margin of profit.

To illustrate:

Rate per £ sterling at which a demand draft on London can be sold.	4.8500
English stamp charges .....	.024
Cost of collection .....	.010
Discount for 63 days at 2½ per cent .....	.242
Margin of profit .....	.024
	— .0300
	<hr/> 4.8200

The rate, therefore, which a Chicago foreign exchange buyer could pay for a 60d/s draft would be \$4.82 per £ sterling.

*Payment Bills.*—Under the second method, viz., that of documents delivered against payment of the drafts in question, the drafts

are drawn by the southern cotton buyer or exporter upon a European buyer or importer instead of upon a bank. In this case the American foreign exchange buyer forwards the documents together with the draft to his European correspondent with instructions that the draft be presented for acceptance, but that documents be delivered only upon the actual payment of the draft. The cotton, upon arrival abroad, is stored for account of the American foreign exchange banker and the drawee or acceptor is at liberty, at any time, to call upon the European bank, in whose possession the documents are, and tender payment for the draft, less the rebate, for the number of days the draft has still to run before maturity.

*Rebating Payment Bills.*—The rate of rebate is dependent on the bank rate prevailing at the time when such draft is paid. In England the rebate rate is one per cent below the Bank of England rate, while on the continent the actual bank rate is figured. Inasmuch as the taking up of such bills is subject to the call of the drawees, European bankers rarely are willing to discount the same. It must be further noted that with a bill of this character, only the names of the drawers and drawees are back of the documents, and on this account the American foreign exchange banker must necessarily limit his purchases of this character of bills to the amount of credit which he is willing to furnish the drawers and acceptors, holding the cotton as collateral.

*Making Payment Bills Liquid.*—The amount thus invested can be made liquid by the American foreign exchange banker drawing his time draft upon his European correspondent, who accepts the draft and holds the documents controlling the cotton which came forward attached to the payment bills as collateral. The time draft thus drawn can be discounted by the drawer in the foreign discount market and the proceeds availed of by the sale of his demand check, or he can sell the time draft in the open market in America. If payment bills are thus made liquid the amounts paid by the acceptor before maturity of the drafts are allowed to accumulate to the credit of the American banker's account abroad to eventually pay his own draft at maturity. In this case he will be called upon to pay a commission to the European bank for accepting the time drafts, which necessarily must be taken into consideration in the price paid for the payment bills. On this account payment bills do not net as much to the American exporter as do drafts under bankers' credits,



but on the other hand, the European buyer saves the commission which he would have to pay his bank for furnishing the acceptance. The American buyer of the exchange when bidding on a 60d/s payment bill to be financed by issuing his own sixty-day draft on London instead of being able to pay the rate of \$4.82, which he could allow for a banker's 60d/s draft, would deduct the cost of the acceptance of his draft—let us say one-eighth of one per cent. His figures would then be as follows:

The rate for a demand draft on London.....	4.8500
English stamp charges .....	.024
Cost of collection .....	.010
Discount for 63 days at $2\frac{7}{8}$ per cent .....	.242
Margin of profit .....	.024
Charges for acceptance .....	.062 $\frac{1}{2}$
	<hr/>
	.03625
	<hr/>
	4.31 $\frac{1}{2}$

The question of the rate of interest allowed on balance accumulating in the foreign bank, as compared with the rebate rate, must also be taken into consideration.

*Spinners' Acceptances.*—Under the third method, viz., where drafts are drawn on spinners direct, documents to be delivered against acceptance, the acceptances run to maturity and it is possible to have the same discounted in the open discount market, but usually the rate of discount for such bills is higher than is that for bankers' bills. The buyer of such drafts, therefore, in making his bid must, of course, figure in the rate at which such bills can actually be discounted, the difference ranging from one-eighth to one-fourth of one per cent per annum above bankers' rates, depending upon the money market.

*Bills Bought for Investment.*—When conditions are favorable the foreign exchange banker instead of discounting all of the bankers' and spinners' acceptances or issuing his own time drafts against payment bills will buy such drawings and hold the same as an investment to be collected and disposed of at maturity. It usually occurs that during a heavy export movement exchange rates are low and on account of the large demands made upon the discount houses abroad, discount rates are high. When this condition pre-



vails, time bills can be bought on a low basis while the exchange at the maturity of the bills probably will have advanced, thus showing a comfortable earning on the investment.

*Method of Bidding.*—The bids above referred to are made by wire to a foreign exchange broker in the South, and before the close of the day's business, telegraphic advices will have been received as to the amount of exchange which the bids had been successful in securing, as a result of which the foreign exchange buyer cables his European correspondent accepting discount for the amount involved.

*Currency Movement.*—When the draft drawn by the Southern cotton buyer or exporter upon the European reimbursement comes forward to the Chicago foreign exchange buyer, the amount drawn for in United States dollars is placed to the credit of the Southern bank by which the same was negotiated. In this way the Southern banks during the cotton season accumulate large balances in the Northern and Eastern centers which they are unable to dispose of, as a consequence of which the actual cash is shipped to the South from time to time, to cover the cost of which the Southern bankers naturally charge their customers what is known as exchange. If the foreign exchange banker in the centers outside of New York does not have sufficient local demand for his foreign exchange, the balances accumulated abroad are disposed of by the sale of demand checks or cable transfers to New York foreign exchange houses. It is, therefore, evident that in the bidding for drafts drawn against cotton shipments the rate at which New York exchange can be disposed of must be taken into consideration. If, for instance, New York exchange is ruling at twenty-five cents a thousand dollars discount, the Chicago banker could pay on the basis above referred to a rate of \$4.82 per pound sterling, less the twenty-five cents per thousand which it would cost to get rid of his New York exchange, equaling approximately twelve cents per £100 sterling. He would, therefore, be able to pay only \$4.817½. Should, however, New York exchange rule at a premium in Chicago, then the opposite would result.

*Gold Importations.*—If the New York banks do not find sufficient demand for foreign exchange to dispose of their balances abroad settlement must be made in actual gold, resulting, of course, in gold importations.

*Purchases Limited.*—At the beginning of the season the American buyer, after having thoroughly acquainted himself with the financial and moral standing of the exporters from whom he buys exchange, arranges the lines up to the limit of which he is willing to accept drawings of the various kinds of bills. He also decides upon the line of acceptances of any of the European banks he is willing to negotiate. When the limit is reached, the brokers are notified and the seller of exchange in the meantime must place the same elsewhere.

*Hypothecation of Cotton.*—The foreign exchange banker also secures from the exporter what is known as a general hypothecation, under which the latter authorizes him, in the event of the dishonor of any draft, to take possession of the cotton and dispose of the same in the market, applying the proceeds against the drawer's obligation, collecting the balance from, or remitting the surplus to, the drawer in question. In addition to this, the banker is authorized, unless otherwise and specially instructed, to deliver the documents against the acceptance of the drafts.

#### *Insurance of Cotton*

Inasmuch as cotton is of a perishable and inflammable character, the same is covered by insurance from the time that it is delivered to the gin, when it comes under what is known as a ginner's local fire policy, and the bankers advancing the funds each, in turn, insist upon being fully protected against loss either by fire or the sinking of a vessel, which may be covered by a separate policy on each shipment, in which event such policies are attached to the drafts, or under an open policy, in which event satisfactory evidence from the insurance companies to the effect that such a policy has been issued is placed on file with the bankers concerned.

#### *Hedging*

The cotton buyers in the South are in daily communication by cable with their European connections. Let us say that a cotton buyer in Dallas in the morning receives an order from abroad to purchase five thousand bales at a stated price covering a specified grade of cotton. He immediately wires orders to his representatives, and inasmuch as he usually has quite a number of such

representatives in various sections of the country, it frequently happens that at the close of the day's business when all of the purchases have been reported, it is learned that more than the order in question has been bought, and not wishing to speculate, the Dallas buyer immediately goes to the cotton exchange and there disposes of the number of bales overbought, but instead of selling spot cotton, he sells futures. Should the market on the following day for spot cotton have reacted, the bales overbought the day before would have to be sold at a loss, but inasmuch as the spot market moves in sympathy with the future market, the buyer of the cotton would be in a position to buy against the futures which he has sold, at a profit equal to the amount lost on the spot transaction. This is what is known as legitimate hedging of cotton in order to prevent speculation. Should the cotton buyer at the close of the day's business learn that the amount of cotton purchased was not sufficient to cover the amount sold abroad, then he would become a buyer of futures instead of a seller.

## THE COFFEE MARKET

BY G. G. HUEBNER, PH.D.,

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Over 2,300,000,000 pounds of coffee are annually produced on the plantations of the countries where it is a staple product. About 961,000,000 pounds are each year consumed in the United States, and in 1910, 873,983,757 pounds were imported. This places the United States in the forefront of all the coffee markets of the world and has made possible the development of a market as highly organized as those of grain, cotton or any of the great agricultural staples.

### *Coffee Production and Consumption*

The source of the coffee supply lies in the tropics and is widely scattered. The greatest of all the coffee producers is Brazil, and Brazilian coffee, being of the "strong" variety, is of particular importance to the American consumer with his long nursed taste for that class of table beverage. The Brazilian states of Rio and Sao Paulo have the principal coffee plantations of the entire world. To them coffee means more than does the cotton crop to the American cotton belt. The close dependence of the people upon their single large crop is the chief difficulty which now confronts them. From 9,500,000 bags in 1899-00 the world's crop grew to 11,300,000 in 1905-06 and to 20,000,000 in 1906-07, with a consequent decline in price and further mortgaging of the coffee plantations of these states.

The State of Sao Paulo in attempting to aid the planters in their difficulty undertook its policy of "coffee valorization," which has since been one of the leading forces in the production of coffee as well as of considerable importance in its distribution to the various coffee markets. Coffee valorization is essentially an attempt to corner the market, and in that way control the price. The State of Rio declining to share the financial risk involved, it was undertaken by Sao Paulo alone. In order to limit the world's supply to 17,000,000 bags, the state went into the market as a coffee buyer. A tax was placed upon exports and coffee-tree planting, treasury bills were issued, and, with the stored coffee as collateral, loans

were obtained from large banking concerns in New York, London and various European ports. By the end of 1907 the state found itself in financial difficulty with a large amount of coffee on hand, and unable to raise more funds with which to stem the still declining market. In order to refinance its coffee holdings an agreement backed by the federal government of Brazil was made with the syndicate of interested banks. Under this agreement (1) the federal government guarantees a new loan of £15,000,000, (2) the coffee holdings are stored in warehouses at New York and seven European ports and warrants are deposited with three designated banks as trustees, and (3) the coffee is placed under the control of a committee of seven residents of the United States and Europe. These men may sell the coffee holdings, the minimum annual sales being specified. (4) The surtax is raised from three to five francs per bag, and is used for interest, amortization, etc., of the loan. (5) The total exports are limited to 9,000,000 bags in 1908-9, 9,500,000 in 1909-10, and 10,000,000 thereafter annually.

During the period of state purchases various effects of the valorization plan became manifest. On the one hand the state government suffered a loss of several millions; and the credit of the state suffered severely. Conversely, however, numerous planters received higher prices than the open market warranted; and prices generally were steadier. The large crop of 1906-7 would probably have demoralized the world market had the state been absent as a powerful bull factor. Moreover, the preference of the government for the better grades, also, induced the planters to improve the quality of their output, and in that way exerted a favorable influence upon production.<sup>1</sup>

Since additional purchases have been discontinued the State of Sao Paulo is still a material factor in the production and sale of coffee, in that the surtax on exports still remains, the annual quantity of exports is restricted, there is a tax on the planting of new trees, and a large though declining quantity of coffee lies in the warehouses of the leading coffee markets which, under certain restrictions, can be sold by the trustees in charge. Ordinarily a large known supply of a staple article acts as a weight upon the market, but it has not had that effect upon the price of coffee. This price has been increasing during the last year, and coffee dealers have

<sup>1</sup>Quarterly Journal of Economics, May, 1909.

explained that any attempt on the part of an importer to seriously interfere with the plan to maintain prices could be crushed by the release of large quantities of the stored coffee. On the other hand the coffee can be safely held, for its quality increases with age.

Though Brazil produces about two-thirds of the world's crop, the valorization plan was hampered by the existence of other sources of supply. The Central American countries, chiefly Guatemala, are an important source; Venezuela, Colombia, the Dutch East Indies, the West Indies, Mexico and various points in Africa produce considerable coffee; and smaller amounts are grown in Ecuador, Arabia and the Philippines.

The following table shows the amounts raised in the leading producing countries in 1909 and the quantities exported to the United States in 1909 and 1910 (in thousands of pounds):

Country	Production in	Exports to United States	
	1909	1909	1910
Brazil .....	1,674,428	818,444	699,242
Central America .....	164,489	40,752	30,040
Venezuela .....	103,454	54,774	42,542
West Indies .....	89,733	3,313	4,632
Colombia .....	79,366	60,184	53,332
Dutch East Indies .....	56,768	11,387	11,354
Mexico .....	42,000	35,004	21,205
Africa .....	20,452	17	3
Total .....	2,230,690	1,023,875	862,350
World's total .....	2,367,289	1,051,749	873,984

In the aggregate no country rivals the United States as a coffee-drinking nation. Germany comes nearest with an annual consumption of about 396,205,000 pounds. The annual per capita consumption of the United States of nearly 14 pounds is, aside from the producing countries, exceeded only in Belgium and Holland. In Germany it is but 6½ pounds, in France 4.3, in Austria-Hungary 2.05, and in England 69/100 of one pound.

#### *Classification of Coffee*

Many grades and classes of coffee are sold in the American market, and at different points in the course of its sale and by the various parties handling it, it is differently classified. In Brazil coffee is classed primarily as "Rio" and "Santos" coffee, and these



again into "highland" and "lowland." It is then further divided into grades as to its quality, commonly into first, good first, regular first, ordinary first, second, good second and ordinary second.

Importers and roasters also distinguish between coffees as to their source of production. Thus they commonly talk of Rio, Santos, Java, Mocha, Maracaibo, La Guaira, etc., coffee. Java and Mocha, however, have become trade names applied to many kinds of "mild" coffee. Even in the case of coffee legitimately called "Java," the name is a myth, for Java in the blend comes mostly from the island of Sumatra. American coffee dealers, also, commonly classify coffee into grades of quality depending upon the size of the bean, its color, uniformity and cleanliness. Terms such as fancy, prime, good, fair, ordinary and common are used in buying and selling spot coffee.

The most generally applied classification is that of the New York Coffee Exchange, which is used by its members for trading purposes. Its rules divide the green coffee as it is imported into nine grades known as Standard Grades numbers 1 to 9. The methods of arriving at these grades will be explained later.

#### *The Purchase and Sale of Coffee*

In the bringing of the coffee from the planter to consumer many parties are usually involved. As a rule the green berry passes from the planter of Brazil to the "Commisario" who is a commission man and something more. As the local banker, landlord or country merchant sometimes does in the cotton states, so the commisario lends money to the planters, taking the growing crop as collateral. Later the coffee may be sold to him as a dealer or through him as a commission man, the planter receiving the balance over and above his debts. The commisario may sell the coffee to an exporting concern, and this may sell it to the New York importer. However, the process varies, for some planters sell direct to exporters; and importing firms may have agents to buy direct from the planter or commisario.

The green coffee being purchased by the importers it is traded in at the great coffee markets, the largest of all being New York. Other dealers may intervene, but ultimately the green berries are purchased by "roasting concerns," and the importer may himself be a roaster. Here the coffee is roasted and prepared for the

grocery market. It may be shipped to wholesale grocers in bulk or in prescribed packages, whole or ground, and special trade names and brands may be attached. The wholesale grocers in all parts of the United States distribute it to the retail merchants.

The New York market receives about ninety-seven per cent. of the annual coffee imports of the United States, and it is here that the best organized coffee market has been established. In the passing of the green coffee from importers to roasters or dealers and brokers, two markets are distinguished. One, the "spot market," is of local significance and is located in the district of lower Wall Street and sections on Water and Front Streets. Here coffee importers, roasters, dealers and brokers conduct their "street sales." Besides these private sales there are the "exchange sales" which are made in the other or "exchange market." This business is conducted on the floor of the "Coffee Exchange of the City of New York."

#### *The Coffee Exchange of the City of New York*

In the fall of 1880 there was a period of two months during which the coffee trade was almost at a complete standstill. There was a large accumulation of coffee in the port warehouses and the traders of the interior were fully supplied. Prices varied between sales as much as three cents per pound or \$4.25 per bag. The first coffee exchange was then organized at Havre in 1881, and in the same year the "New York Coffee Exchange" was incorporated. It operated until 1885, when its property was by resolution of the governing committee transferred to the present "Coffee Exchange of the City of New York." As stated in its charter its purposes "shall be to provide, regulate and maintain a suitable building, room or rooms for the purchase and sale of coffees and other similar grocery articles in the city of New York, to adjust controversies between members, to inculcate and establish just and equitable principles in the trade, to establish and maintain uniformity in its rules, regulations, and usages, to adopt standards of classification, to acquire, preserve, and disseminate useful and valuable business information, and generally to promote the above mentioned trade in the city of New York, increase its amount, and augment the facilities with which it may be conducted."<sup>2</sup>

<sup>2</sup>Charter, By-Laws and Rules of Coffee Exchange of City of New York (1902), p. vi.

In the promotion of the trade at New York the exchange has been signally successful, New York having become the greatest coffee market the world over. It has also been successful in organizing the trade on a safe and conservative basis. At first the calls of the exchange were "attended barely by a corporal's guard, many of the larger importing and jobbing houses refusing to join. But in less than a year the *raison d'être* of an exchange in New York becoming evident, nearly a hundred representative houses in the city and abroad that a year before had refused to join at the original initiation fee of \$250 purchased seats in the exchange at \$500; and those who did not even then join were glad to come in later at \$1,000, at which figure the number was swelled to an even hundred."<sup>2</sup> At a recent date its membership numbered 323 brokers, importers, dealers and roasters. Membership is passed upon by a committee on membership, but any one twenty-one years of age, resident or non-resident, of good character and commercial standing is eligible when proposed as a candidate by one member of the exchange and seconded by another. The membership committee refers the names of applicants with recommendations to the board of managers, where a ballot is taken, one adverse vote in three excluding. Seats sell at \$1,500 but the exchange holds them at \$10,000 until there are 350 members of the exchange. Annual assessments are only about thirty dollars per year as the rents of the new building at Hanover Square are nearly sufficient to provide the necessary funds.

The exchange annually elects a president, vice-president and treasurer, who perform the usual duties of exchange officers. The real governing body is the Board of Managers, consisting of the president, vice-president, treasurer and twelve other members. This governing board, meeting monthly, appoints the necessary subordinate officers and employees and fixes their compensation, and may "summon before them any officer or member for any purpose whatsoever." It appoints the secretary of the exchange from among its own number, a superintendent of the exchange, and the numerous committees which are in active charge of specified activities. It also licenses the necessary coffee graders, warehousemen, weighmasters and samplers of the exchange.

A brief discussion of the duties of the superintendent and the

<sup>2</sup>The *Alcolm Magazine*, March, 1909, p. 4.

various committees will help to explain the methods of the exchange market. The superintendent, under the direction of the board of managers, has charge of the details of its work and of that of the various committees. He keeps all the books and documents of the exchange; collects and pays over to the treasurer all moneys due the exchange not otherwise provided for, receives, deposits and pays over all margins on coffee contracts; has active charge of the exchange rooms and the bulletin board; and manages and appoints, with the consent of the board of managers, the assistants needed to perform the details of the work under his charge.

One of the functions of the exchange is that of grading and classifying the coffee, and it has taken steps to fully safeguard this work. As previously stated, the exchange rules provide for nine standard grades, and only licensed graders are permitted to grade coffee traded in on the exchange. At a recent date there were twenty-six licensed graders. One of them is appointed by the board of managers to annually provide fresh standards and "maintain them as nearly as possible on an equality." These selections, when approved by the board, are adopted by the exchange as the basis for the year. Upon receipt of the coffee at a licensed warehouse, two licensed graders are selected, one each by the buyer and seller, and these men who are experts each receive at least three cents per bag for their services when performed for members of the exchange and at least six cents when for others. In case they disagree their differences are referred to the Board of Coffee Arbitrators, consisting of ten experts appointed by the board of managers. The superintendent now selects three of these arbitrators by lot. Upon examining approved samples of the coffee and comparing them with the standard samples, a majority decision of the arbitrators is final. Should they be unable to arrive at a decision from the samples submitted, the original graders are given an opportunity to alter their gradings, and if they do not do so the samples are submitted to the entire Board of Coffee Arbitrators, excluding any members who may have been the original graders, for a majority vote. As soon as the coffee is graded a certificate is issued stating the coffee grades and bearing the signatures of the superintendent and graders. This certificate is conclusive evidence of the grade for the subsequent six months, the buyer receiving the original and the seller a duplicate.

In the course of trade, claims and trade controversies of various kinds occasionally arise, and the exchange organization includes machinery for their peaceful settlement. The board of managers annually elects an Arbitration Committee of five exchange members, who work under oath to decide disputes fairly. When the parties to a dispute submit their case to the committee they sign an agreement to abide by its decision. All parties, however, are not willing to arbitrate a dispute, and for such instances the board annually appoints an Adjudication Committee of seven. This committee has the power to adjudicate all claims and controversies between members arising out of any transaction in merchandise "if notice in writing of such claim or controversy, and of the intention to demand an adjudication thereon, be served by either party thereto within ten days from the ascertainment thereof." Within three days after such notice is served, each party either appoints an exchange member as his adjudicator or the superintendent does it for him, and these select a third from the adjudication committee. An appeal may, within two business days, be made to the board of managers, who, if they decide to grant the appeal, appoint an Appeal Committee of five not less than three of whom are members of the board. A majority vote of this committee then becomes final and binding. The difference between arbitration and adjudication of a dispute is that the former is voluntary with both parties, while the latter is compulsory upon application of one party.

Another committee of trade importance is the Spot Quotation Committee of five exchange members. Each day at two o'clock, except on Saturday, when it meets at 11.45, this committee by a majority vote establishes the official daily market quotation of number seven coffee. There is likewise a Committee on Quotations of Futures. This committee of five meets daily "immediately after the first call and at the close of the exchange and reports to the superintendent the tone and price of the contract market, to be posted on the blackboard and transmitted to other exchanges and commercial bodies."

A Committee of five on Trade and Statistics has the important function of reporting to the board as to regulations for the "purchase, sale, transportation and custody of merchandise," and it attempts to establish uniformity in such matters between different markets. It also has charge of "all matters pertaining to the supply



of newspapers, market reports, telegraphic and statistical information for the use of the exchange. In the early 80's the exchange abolished the old method of keeping coffee statistics, and the basis then adopted has since been accepted by all the large coffee markets of the world."

A Committee on Commissions (5) reports on changes in commissions, violations of the rules on commissions and the rules governing the employment of agents by exchange members. At present the minimum commission for members is two cents per bag, and for non-members it is four cents. In case of actual delivery an additional minimum brokerage of one cent for members and two cents for non-members prevails.

Other committees are the Finance Committee (2) to audit bills and claims against the exchange, direct deposits and investments, and audit the monthly and yearly accounts of the treasurer; a Law Committee (3), to deal with matters of legislation; a Committee on Rooms and Fixtures (3); Membership and Floor Committee (5); and a Nominating Committee (5). Organized as above outlined and with a well-established code of trade rules, the exchange annually transacts a large number of sales in a businesslike way. Since 1900 the volume of sales has varied from 6,881,500 bags in 1908 to 25,487,500 in 1904. There is a large amount of trading in future contracts, and a standard form has been adopted by the exchange. No future contracts are valid unless they are made in the following form:

OFFICE OF \_\_\_\_\_,  
NEW YORK, \_\_\_\_\_, 19—.

Sold for M. \_\_\_\_\_,  
To M. \_\_\_\_\_.

Thirty-two thousand five hundred pounds, or about 250 bags of coffee, growth of North, South or Central America, East or West Indies, deliverable from licensed warehouse in port of New York, between the first and last days of — next, inclusive. The delivery within such time to be at seller's option, upon a notice to buyer of either five, six, or seven days, as may be prescribed by the trade rules. The coffee to be of any grade, from No. 9 to to No. 1, inclusive, provided the average grade shall not be below No. 8, at the rate of — cents per pound for No. 7, with additions or deductions for other grades according to the rates of the Coffee Exchange of the city of New York existing on the afternoon of the day previous to the date of the notice of delivery. Either party to have the right to call for margins as the



variations of the market for like deliveries may warrant, which margins shall be kept good.

This contract is made in view of, and in all respects subject to, the rules and conditions established by the Coffee Exchange of the City of New York, and in full accordance with Section 102 of the by-laws.

\_\_\_\_\_,  
*Brokers.*

(Across the face is the following:)

For and in consideration of one dollar to \_\_\_\_\_ in hand paid, receipt whereof is hereby acknowledged, \_\_\_\_\_ accept this contract with all its obligations and conditions.

All deliveries on such future contracts must be made from licensed warehouses. There is a separate "to arrive contract," but this likewise requires delivery at a licensed warehouse unless the buyer and seller have a mutual understanding to deliver the coffee from dock or ex-ship. Margins to protect the contract may be called for by either party. The largest deposit for margins was made in 1904 when \$22,661,710 were deposited with the superintendent as required by the exchange rules.

The basis grade in a future sale is No. 7, but any other grade may be delivered so long as the average is not below No. 8. The price agreed upon is in terms of No. 7, and when other grades are delivered additions or deductions are made at a relative difference of 50/100 of a cent per pound for each grade. This is a "fixed difference" plan not found in any of the great grain or cotton exchanges. At one time the trade followed the method of daily revisions, but the fixed difference plan was adopted as long ago as 1884. About a decade later it was repealed, but has since been re-established. The secretary of the exchange believes that "the value of such fixed differences is manifest, as both buyer and seller know when entering into a transaction at what difference in price above or below the basis of all contracts, standard No. 7, coffee so bought or sold can be delivered." The right to deliver any grade in a future transaction has done much to avoid the danger of corners in the future market.

If no quantity of coffee is specified in a contract, it is understood to be for 250 bags of about 132 pounds each. False or fictitious sales are prohibited, and all contracts must be reported to the superintendent. All contracts, moreover, are binding and call for the delivery of actual coffee, although "ring settlements" may

be made whereby, as in a grain or cotton exchange, parties holding contracts against each other corresponding in all respects except as to price may cancel them after settling price differences.

The future contract, besides being used for the delivery of coffee during stated months in the future at a given price, is also used for hedging purposes. As in the grain or cotton markets, dealers protect themselves against price fluctuations by hedging in the future market. Importers, for instance, when purchasing coffee abroad frequently sell an equal amount for future delivery on the exchange. "When the time for delivery arrives it is simply a question of calculation of the market conditions whether it is more advantageous to repurchase the sales made as a hedge, or as a kind of insurance to protect themselves against loss, and free the coffee so engaged, or to make delivery of the coffee as it comes in."<sup>4</sup>

The price of green coffee is largely determined on the exchanges of New York, Havre and Hamburg, and the daily quotations on the New York exchange are heeded by the coffee trade throughout the world. It is a natural market in that all the numerous price factors are weighed by the traders in making their transactions. The amount of production, the partial control of production and sales by the valorization plan, the growth or decline of coffee consumption, the adulteration of coffee, the use of coffee substitutes, such as tea, postum, malt coffee, etc., money and trade conditions, and trade expenses, all combine to make the price of coffee, but the exchange is the spot where the buyers and sellers, influenced by these various forces, meet each business day and trade in coffee. They bid and ask what they believe to be the possible price, but with each sale a buyer and seller come together and determine a definite price which becomes a matter of record. Price quotations are sent by one great market to another, and as each must heed to some extent those of the others, the trade, within certain limits determined by special conditions, obtains a world's price. As in the grain, cotton or any trade involving thousands of producers, traders and localities, only a highly organized market makes possible a world's price. Without it, differences in prices in different localities would be far wider than at present and the effect of supply and demand would be local instead of world wide.

<sup>4</sup>R. C. Auld, in *The Alcolm Mag.*, March, 1909, p. 4.

## COMMUNICATION

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### SHIPPING FACILITIES BETWEEN THE UNITED STATES AND SOUTH AMERICA

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BY HON. WILLIAM E. HUMPHREY,  
Member of Congress from Washington.

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In this publication for May last there appeared an anonymous article entitled "Commerce with South America." It is certainly to be regretted that the name of the writer of this article was withheld. I trust that all statements in relation to other phases of the subject are not as misleading as those in regard to the shipping facilities between this country and South America. The argument that he makes on this subject is the familiar one that has appeared in the various publications of this country in defense of the foreign steamship combine that yearly levies its unearned millions upon the American people. While not intimating that this article belongs to the class furnished by the hired writers of this South American combine that entirely controls the carrying trade between this country and South America, one thing is certain, it meets the most enthusiastic endorsement of this foreign monopoly.

The statement to which I particularly wish to call your attention, which gives the substance of his entire article upon the question of shipping, is in the following language and found on page 74 of the May number:

"In fact, having regard for the volume of cargo available, these countries are already relatively as well served from New York as are the principal ports of Europe and Asia.

"Nearly all the boats for Brazil, as well as those for the River Plata, accommodate passengers, and some of the lines operate excellent passenger boats on good schedule time. So it is no longer necessary to travel via Europe, except for those travellers who wish to spend more time and more money, because they like to take in the pleasures of London and Paris en route."

These are the statements that the conferences of the foreign ships composing the lines between here and South America are constantly giving publication in every conceivable way. The writer of the article attempts to demonstrate the truth of his statement by giving a list of what he terms "sailings" by so-called regular lines. But he does not call attention to the fact that there is not a single American vessel of any kind running between this country and South America beyond the Equator. He also carefully conceals the fact that there is not a single first-class vessel, nor even a single second-class vessel of any kind flying any flag running between this country and South America. He also directly misstates the facts when he gives, as he does, fourteen regular lines. He could not be much further from the truth than when he made that statement. As a matter of fact there is but one out of the fourteen that he specifies that professes, or even attempts to maintain, a regular schedule service. All the vessels on all these lines are slow. All of them are third class or poorer. Most of them do not run more than twelve knots an hour. Not more than three vessels can be termed in any sense modern, while as a matter of fact most of them are antiquated and out of date. None of the vessels running directly between here and South America is to be in any way compared with the vessels running on the regular lines between Europe and South America.

All statements—such as made by the nameless writer—are attempts to deceive the public by telling half the truth, by listing a lot of old, slow and obsolete vessels as regular lines and then leaving the inference that the service they give is equal to the regular lines between Europe and South America. It would be just as near the fact to say that Philadelphia had ample railroad facilities with New York, if it had only slow and irregular freight lines, and that these lines in their own way and in their own time and at their own price carried the freight and the mail, and so completely monopolized the field as to prevent all competition. Philadelphia would then, according to the views of this anonymous writer, have ample railway facilities to carry all her freight and her mail, and the manner and the rapidity with which it was carried would not be any ground for complaint. This is exactly the situation between here and South America to-day. Under such conditions would Philadelphia have the efficient facilities for trade with New York as Chicago now has with its fast trains running on fixed schedules with all modern

equipments? In this illustration Chicago occupies exactly the same position that Europe to-day occupies as compared with the United States in contesting for the trade of South America. The deception of these claims made in the article referred to, and by other defenders of this foreign monopoly, is perfectly plain. They cite these old and out-of-date vessels and claim that: *sufficient facilities* of most inferior character are *efficient facilities* to meet the competition and the demands of modern commerce.

From every one of our South American consuls we have the oft-repeated declaration that what this country needs to develop our commerce with South America is fast and regular steamship lines under the American flag. So slow and uncertain is the communication furnished to-day that practically no American fruit goes to South America except by way of Europe. Mr. George E. Anderson, American Consul-General at Rio de Janeiro, in his report of July 30, 1909, says:

"American fruit often comes to Brazil via Europe. Some American apples have been shipped across the tropics without ice, so strong has been the demand for them, although the loss en route was enormous."

This statement graphically shows the character of the service furnished, and the character of the ships used between here and South America. Further on Mr. Anderson says:

"In spite of the fact that each country in Europe can take advantage of the vessels of every other European country in the trade with South America, as the United States does of the English and German vessels serving the trade between the United States and Brazil and the River Plata, each of the principal trading nations of Europe maintains by subsidies and mail subventions a line of its own."

Here we have stated the vital difference between the service furnished between here and South America, and between Europe and South America. Europe has the fast, direct and regular lines. We have only practically a tramp service of slow ships. With these great advantages of fast and regular lines, and with each line an agent of the business interests of the government whose flag it flies working for those interests and against the interests of the United States, is it any wonder that we are not getting our share of the trade with South America? What patriotic citizen can doubt the



wisdom of the statement of Consul-General Alban G. Snyder, at Buenos Aires, January 14, 1909, in his report when he says:

"We cannot acquire our proportion of the foreign trade and what our over-production may some day demand without quick, regular and speedy ships. Under present conditions it is remarkable that we have the amount of trade in South America which we now possess."

What has already been said shows the difference in the character of the service furnished between this country and South America, and between South America and Europe; but let us take a few specific facts as showing the difference between these two services and, also, as throwing great light upon the character of the service between this country and South America.

Mr. I. E. Moses, one of the leading citizens of Seattle, Washington, who had just returned from a trip to South America, stated under oath on June 10, 1910, before what was known as the "Steenerson" Investigating Committee of the House of Representatives among other things the following:

I have here a list of the ships arriving and the ships sailing from Buenos Aires that I cut out of the newspaper there. For the last day of April and the month of May there were thirty-eight mail steamers expected at Buenos Aires, out of which five came from New York. There were eighty-three ships altogether, mail and freight ships, that were to arrive at Buenos Aires, out of which five came from New York. There were thirty-five ships sailed from Buenos Aires in May, one of them being a mail steamer to New York. The total that sailed during the month of May and the last day of April from Buenos Aires was sixty-three. Three of them were to go to New York. Out of all of those lines coming from Germany, France, Holland, Italy, Sweden, Austria, Spain—and I also saw the Portuguese flag—there was not a single American flag. The consul at Buenos Aires told me that maybe once or twice a year a sailing vessel with the American flag would come down there.

In passenger traffic a great many people travel by way of Europe because it only takes a couple of days longer and I think the additional fare amounts to only about \$10, and there is absolutely no comparison in the accommodations. You can travel like a civilized human being on the Royal Mail, and then from Southampton to New York, of course you get a good steamer.

Mr. Moses further testified that his investigations demonstrated that it was impossible to be certain of sending freight from Seattle



to Buenos Aires and having it delivered in six months unless it was sent by the "Conference" lines, the reason being that the "Conference" lines so completely monopolized the trade that they could keep a vessel outside of the conference from securing wharfage facilities to unload its cargo for a period of from three to six weeks, and thereby preventing the delivery of goods within a reasonable time, even after the vessel had actually come into port. And for this reason, among others, he found it inadvisable and impossible for merchants in Seattle to do business in Buenos Aires. It is a well-known fact that has never been disputed, that if an article is sent from this country to South America that requires prompt delivery it usually goes by the way of Europe. It is also a fact that many manufacturers of this country have been forced to establish factories in Europe in order to reach the South American trade. If any one wishes information upon this particular point or questions the correctness of this statement I would suggest that he ask the Hon. George W. Fairchild, member of Congress; Mr. J. A. Coffin, of the Aeolian Company, New York City, N. Y.; Mr. Phillip Worlin, of New Orleans, La., or Mr. George W. Gittins, general manager of the firm of Kohler & Campbell, New York City, N. Y. These men are all large shippers. They know the facts and they will substantiate everything herein stated.

If any one desires information in detail as to the shipping conditions existing between this country and South America, as compared with those between Europe and South America, he can secure such details by sending for a copy of Senate Document No. 476, Sixty-first Congress, Second Session.

I am in receipt of a letter under date of August 2, 1911, from Mr. Gittins giving some of his recent experiences. From it I quote the following:

Some few months ago we made a shipment to Rio de Janeiro of a number of pianos and cleared the shipment the same day and put the documents in the mail. The papers evidently went via Europe, but wherever they went we do not know. The shipment of pianos arrived a few weeks ahead of the documents and the result was that there were custom's fines and storage charges to the extent of over \$200.00 on the entire shipment, because the shipment could not be taken out of the customs before the documents were received.

We have had many occurrences of this character. It is a wonder that

we can retain our trade in South America, which is fast developing in all of the countries.

This is an ordinary experience not only with this firm, but with all shippers who are compelled to avail themselves of the service between here and South America so much praised,—by anonymous writers and by those interested in these foreign steamship lines, or by those who receive rebates or other special favors from them. I quote further from Mr. Gittins' letter concerning a recent attempt to ship a consignment of twenty-four pianos to Montevideo on the steamship "Hermiston" of the Houston Line:

We got our permit in the regular way and we delivered our shipment to the pier promptly. Several days after the steamship sailed, in a merely accidental way, our Export Manager discovered that the shipment was yet on the piers of the Houston Line, the S/S having sailed without taking our goods.

When I discovered it I telephoned to the Houston Line and told them that I would send our truck there and take the shipment away and send it on another line, but they refused to deliver the same, on the ground that their B/L read that if they did not make the shipment on one steamship they were at liberty to make the next one. This steamship, of course, would not sail for probably a month.

I here publish in full a letter written Mr. Gittins by his representative in Rio de Janeiro.

Stephen Schaefer  
Caixa do. Correlo No. 452  
Rio de Janeiro

Agent for  
American Manufacturers

Show rooms and office  
No. 50, Rua Dos Ourives

RIO DE JANEIRO, July 14, 1911.

*My dear Mr. Gittins:*

In order to show you how American goods are treated here by the shipping companies, I will take for example the three autos you have sent to me by the Steamship Voltaire, which was expected here on the 6th and arrived on the 9th July. This boat carried not a large cargo to Rio de Janeiro, but of all the cargo it carried, to-day, on the 14th of July (five days after arrival) not a single volume has been turned over to the custom house. The goods are in many small boats; my three autos are in three different boats. The shipping company will probably commence to-morrow, the 15th of July or else on Monday the 17th of July, to bring the boats over to the

custom house, one by one, and my autos will enter the custom house between the 15th of July to the 31st of July. That means that I cannot pay the duties before the autos are in the custom house and that I cannot get the autos perhaps before the end of the month. And, please do not forget that the Lamport & Holt Line is the only shipping company here with whom you possibly can ship goods to Rio de Janeiro. If you would ship with the Lloyd or with other companies, the delay would be twice or three times more! It is a shame on the American Nation that they do not provide for shipping and banks in a territory like Brazil, which, by its nature, should attract their best attention. All banks and shipping companies here are English and German; of course they are not interested in developing American trade by giving special attention and facilities to it.

It would interest me, Mr. Gittins, if you could let me know from time to time about the results of your association with regard to this country.

With kindest regards, I beg to remain, dear Mr. Gittins,

Yours sincerely,

S. SCHAEFER.

The illustrations that I have given are not isolated cases. I could give a thousand similar ones if necessary. And this lack of regular, efficient and reliable transportation facilities, in the judgment of all of our consuls and of all our business men who have had experience, is the main reason why we do not secure our part of the South American trade.

Let us, now, for a moment, examine the magnificent passenger service existing between here and South America of which your unknown contributor speaks so eulogistically. Let me again quote Mr. Moses, as he was not making loose statements and was under oath at the time. His description of the passenger accommodations on one of these magnificent vessels, the "Voltaire," by the way, one of the very best running between here and South America, is graphic and convincing. He was asked the question, "What do you say about the passenger accommodations on the 'Voltaire?'" He replied:

They were about as little as you could get; that is, they claimed to sell first-class passage; of course, there were no first-class accommodations. It is the only ship I remember being on where they had the old-fashioned way of filling the basins. They didn't even have the facilities for pouring water into the basins. We had nothing but a vessel something like a water bottle which they kept under the basin and we had to reach down and pull that out, and as to toilet facilities, the necessary vessel—the chamber—was kept in the same place, the same closet, with the water. The rule was to allow one clean towel a day. The fact is, the first day I went

in to wash my hands I found they had taken my towel out and not put a new one in, and when I inquired about it they told me that they didn't give out towels until half past eleven. I asked the steward what I was to do for a towel in the meantime. After that I found he did not take my towel out until time to replace it.

The only smoking room there was was a little room by the stairs that came up from the lower deck—that is, the deck where the dining room was—and I think three or four chairs around there filled with leather-covered cushions, and there were two chairs screwed to the floor in front of two tables. There was no ladies' saloon, or anything of that kind. When it was raining we had to go down in the dining room or in this smoking room. I have never seen any second-class accommodations on a European steamer that were as bad as the first-class accommodations on the *Voltaire*. In fact, I don't remember seeing as poor accommodations on any steamer.

A rather vivid description of the comforts of this magnificent service that, according to your unknown contributor, there is no excuse for escaping except that the passenger desires to have a good time in London and Paris. Mr. Moses further says:

The mail from New York is a very uncertain quantity. I went into the English bookstore, as it is called, when I arrived in Buenos Aires on the 23d of March, and tried to get a New York paper. The clerk kind of smiled at me, and he said they did not have any; that they would not have any in until the next mail came in. I asked him when that would be, and he said "Oh, you can't tell when any American newspapers will come in. You can get an English newspaper." He said, "We may have a New York paper in two or three weeks." Of course, I do not know whether it is the fault of the publishers or where the fault lies; but while I was there I know that we got the magazines for January, February, and March all in one batch on one day. They only get the Sunday New York papers, and when they come they come several weeks' issues all together. I asked him why they charged 45 centavos, which is about 20 cents, for a newspaper, and he said, "Nobody is going to buy these old newspapers when they could get newer ones, papers of a later date, and so whoever buys these of a later date has to pay for these old ones." Of course, the paper there was a good deal cheaper than at Rio. There the man wanted 50 cents for a New York paper. Reading came high.

I went over on a slow German steamer from Antwerp to Buenos Aires. My reason for doing that was to travel with the men who really knew the business, because it is the salesmen who do the actual business, the proprietors of the large concerns do not. I was the only American on board. There were Austrians and Russians and Frenchmen and Spaniards and Germans. I admit that it was not agreeable, being the butt of the whole party on account of the fact that they looked upon America as a kind of a cow to milk, we having no ships to carry our trade, and the

fact is we can hardly expect the facilities that the foreign countries can get, because the Lamport & Holt people and the other ships are owned in England and Germany, and there is no particular reason why they should give any more facilities than just enough to keep American ships out of the trade and throw as much as possible into the foreign countries.

The entire testimony of Mr. Moses is interesting and illuminating, and any one who cares to read it will find it in Volume I of the Hearings above referred to, page 840.

Few men in this country have made as many trips to South America, or have had as great opportunities to know the facilities furnished to passengers between here and South America, and between Europe and South America, as Mr. Fred J. Gauntlett, of Washington, D. C. He represents one of the great business concerns of this country, and this has taken him to South America many times. I asked him as to the passenger service to be had on the direct lines between this country and South America. His reply in the way of a letter states the conditions so well that I give it here in full:

WASHINGTON, D. C., July 15, 1911.

HON. W. E. HUMPHREY

Washington, D. C.

*Dear Mr. Humphrey:*

Replying to your request that I give you an account of my experience with the direct line of steamships from New York to South America, I beg to say that while I have made several trips to South America, that on account of the many unfavorable reports from other people I have only made one trip from Rio to New York on the direct line, and then only because it was a matter of necessity.

On this trip I found the vessel a good sea-boat, but from the passenger viewpoint that is the only good thing I can say of it.

The boats of this line are primarily freighters carrying a few passengers, which the owners evidently look upon as an accommodation to the public, as no effort seems to be made to give them first-class service, such as one has the right to expect in view of the rates charged. This is borne out by the following:

The food generally is such as would be furnished in a third-rate boarding house. One day after leaving Rio there were no lemons on board. The same thing was the case one day after leaving Bahia and Barbados, and as anyone who has travelled in the tropics can testify, this article is a necessity. The fruit furnished for the table was of a very inferior quality, and some of it served to me was unfit for food.

This is wholly inexcusable, as tropical fruits of most excellent quality

were obtainable at all the ports of call at prices which were ridiculously low.

Three days before reaching New York the chief steward announced that there were no more matches on board, and one can readily imagine the tone of the conversation in the smoking room when this announcement was made.

These few facts, by their smallness, indicate to my mind the utter indifference of the management to the passenger traffic, and as this condition is a matter of common knowledge throughout South America, the people of Brazil, Argentine and Uruguay, as well as other South American countries, will not travel by this line and go to Europe instead, where they have such a good time that they seldom extend their travels to the United States, and it is my opinion that there will be no very great growth of trade from the north to the south until such time as we can get the people of Latin-America to journey north, and realize from practical experience the superiority of the higher standards of American over European comforts of living.

I have met many Latin-Americans who have expressed a keen desire to visit the United States, but say they have heard so much of the discomforts of travel by the direct line, that they decline to subject themselves to from two to three weeks of petty annoyances when they can go to Europe surrounded by all the comforts and luxuries of modern travel by up-to-date passenger vessels.

The vessel upon which I travelled, and I believe the same fact pertains to all the vessels of the line, are not built for the passengers' comfort, as are the boats from Europe to South American ports. The berths are so narrow that they are uncomfortable. The sheets furnished to my room were too short. The boiler and hatches were not insulated, so that the heat radiated throughout the whole ship and on the main deck where the deck chairs were placed, the bulkheads in wake of boilers were so hot that one could hardly touch them.

In justice to the officers of the ship, I will say that they did everything they could for the passengers' comfort, especially the captain and purser, but the faults mentioned were faults of the management, which the officers were powerless to alter.

I have travelled on the following vessels between Europe and South American ports: Araguaya, Avon, Amazon, Aragon and Nile of the Royal Mail Steamship Company; the Konig Wilhelm II, Konig Friedrich August and the Cap Vilano of the Hamburg American Line; the Oriana of the Pacific Steam Navigation Company, and the Principessa Mafelda of the Lloyd Italiano, and found them to compare favorably with the average Trans-Atlantic liner, but so far superior to the vessel of the direct line upon which I travelled which was the "Verdi" that they cannot be compared.

The through rate by the Hamburg American Line to Southampton or Hamburg thence to Buenos Aires is two hundred dollars, which is about the same as charged by the direct line for very inferior accommodations.



In conclusion I might add that the need for a line of fast passenger and mail boats is best illustrated by the fact that I have waited in Buenos Aires thirty-five days for an important letter from New York, and on one occasion a letter was forty-one days under way, and they seldom, if ever, reach that port in less than thirty days.

Very respectfully,

FRED J. GAUNTLETT.

Remember that the "Verdi" and the "Voltaire" are the best, fastest and the most modern ships running between this country and South America. It seems to me that no further evidence is needed to absolutely refute the following statement of the article in the May ANNALS:

"Nearly all the boats for Brazil, as well as those for the River Plata, accommodate passengers, and some of the lines operate excellent passenger boats on good schedule time. So it is no longer necessary to travel via Europe, except for those travelers who wish to spend more time and more money, because they like to take in the pleasures of London and Paris en route."

Mr. Moses and Mr. Gauntlett speak from actual experience. Does your unknown correspondent?

This anonymous writer as a final and triumphant compliment to the magnificent service rendered by this combination of foreign ships, says: "And it is all done without ship subsidy, except that enjoyed by one line under the Brazilian flag." This statement is nearer the truth in sound than in fact. But if it were absolutely true I wish to ask what necessity is there of subsidizing a complete monopoly? What necessity is there for the nation whose flags these vessels fly of paying them a subsidy when this monopoly has the absolute power to levy any rate they see fit and compel the American people to pay it? In fact, many of the lines between Europe and South America receive a subsidy, but they give in return a regular service. Nothing of this character exists between this country and South America. So far as I am aware no one in this country has ever advocated subsidizing a lot of slow antiquated third-class vessels running at irregular intervals. It was undoubtedly in the writer's mind when he uttered these words to discredit recent attempts that have been made in Congress to pass merchant marine legislation. If these words, "And it is all done without a subsidy," did not come from some document secretly prepared by the representatives of the foreign steamship trusts to

defeat merchant marine legislation it is certain soon to be permanently embalmed in that literature. All the ships between here and South America are in one combination. They form a complete monopoly. They fix prices at will. They arbitrarily raise and lower freight rates. These are fixed in advance always by agreement. There is no competition whatever between these lines. I ask what is the necessity of a subsidy under such conditions. If their business is not profitable all they have to do is to increase the rate that the American shipper must pay. Not only are these lines formed into a complete monopoly and fix rates by agreement to raise and lower them at will, but they give rebates and other advantages to their shippers. They refuse to accept freight from a shipper unless that shipper agrees to patronize them exclusively. If a patron ships by another line they not only refuse to pay him any rebate that may be due him, but they refuse thereafter to carry his freight at any price. They not only coerce the shipper into paying exorbitant rates, but when he refuses they drive him out of business.

One of our consuls gives an illustration where a Brazilian firm of coffee merchants was compelled to pay the conference vessel twice as much to carry a cargo as an outside ship already in the port offered to carry it for. These merchants were warned by the agents of the conference that they would send their coffee in the ship of the combine at the price fixed by the combine or they would be driven out of business. Having no alternative they obeyed this mandate. I have in my possession a recent letter from the Arbuckle coffee firm of New York, saying that they were unable to get any of the ships of the conference to carry their coffee unless they would sign a written agreement not to patronize any outside vessel. None of the facts that I have herein stated will be denied by this foreign shipping combination. They dare not deny them. All the evidence fully substantiating every statement I have made is now in the Department of Justice at Washington, D. C. Even the writer of the anonymous article in your May number will not attempt to deny any of these statements. The only answer that is ever made to these statements is by the publication of such articles as the one contributed by him. These they circulate in every way possible and the statements they contain are more misleading in their ingenious mixture of truth and falsehood than if they gave only that which was entirely false. I certainly do not wonder that any

American citizen that would thus covertly defend the most infamous and greedy monopoly in existence would want to do it anonymously, especially when it is remembered that it is a foreign monopoly and that it lives off of the American people.

Some two years ago in an article in "Pearson's Magazine" I called attention to the workings of this shipping trust, to the inadequacy of the service and the exorbitant rates, and of its practice in giving rebates and its infamous methods of driving out of business any one that refused to patronize it. In a short time thereafter a large number of editorials appeared almost simultaneously in newspapers throughout the United States refuting the statements that had been made. The argument advanced and the facts used were almost identical with those used in the article by your anonymous contributor. All these editorials were based upon a statement made by certain firms of coffee merchants in New York City. Soon after the publication of these editorials before the Congressional Investigating Committee heretofore referred to, Mr. Joseph Purcell, of the firm of Hard & Rand, and Mr. Justus Ruperti, of the firm of Gamiska & Co., both appeared as witnesses. Both of the firms mentioned had signed the statement upon which these editorials were based and both of these gentlemen testified that the statement was prepared and brought to their firms to be signed by Busk & Daniels, agents of the Lamport and Holt Steamship Company, the controlling line in this South American monopoly. Mr. Purcell further testified that this line owed his firm \$28,000 in rebates at the time the signature of his firm was requested. A copy of this rebate agreement is published in those hearings, and an examination of it will show that the firm of Hard & Rand stood to lose this rebate unless they complied with the demand of the shipping company. Under the circumstances it is not astonishing that they signed this statement. After this statement was signed it was sent by the agents of the steamship company to the various newspapers throughout the country with a request that favorable editorial comment be made thereon and such request was accompanied by a *renewal of the advertising* of these companies in the particular paper addressed. All these facts appear in this testimony. If this magazine carried any advertising for foreign steamship lines I would warn it that the publication of this article would lose it such advertisements. At least that has

been the result that has followed the publication of some of my articles in other magazines.

It is true that your contributor gives what he calls a table of freight rates. Whether they are correct or false they prove but little or nothing. No one knows what secret agreements entered into these rates, or what the real contract was. Even if they are correct there is nothing more misleading than the isolated comparisons such as he gives. The freight rates charged by the great combination of foreign ships that completely dominates our trade not only from South America, but from this country to all parts of the world are like the ways of Providence, "past finding out." For instance, you can to-day send a ton of pottery from Germany to Denver cheaper than you can send a ton of that same pottery from Ohio to Denver, although it may be carried over the same railroad in the United States. You can to-day send a case of beer from Germany to Salt Lake City cheaper than you can send a case of beer from Cincinnati to Salt Lake City. You can to-day send a ton of steel from Pittsburgh to Yokohama cheaper than you can send one from Seattle to Yokohama, although both tons may be carried at the same time on the same ship. Here, three thousand miles of railway freight is obliterated. These are a few samples of the workings of the great foreign steamship combine that holds the prosperity of this country absolutely within its control. Such actions, however, prove nothing as to the fairness or the justness of the rates. What more graphic illustration of the absolute control of the South American trade by the foreign steamship combine could be given than the fact that last year, 1910, of the 901 entries of steam vessels in this country from South America 270 were in ballast. Think of this situation! So effectually does this monopoly control the trade that it not only fixes rates, but it is able to prevent more than one-fourth of the ships coming into our ports from South America from carrying a cargo at any price. This disgraceful and dangerous condition is not paralleled anywhere else in the world.

In the face of all these facts this nameless writer talks of low rates and ample facilities. It will be hard to convince the American people under existing conditions that the rates between here and South America are just or even reasonable. Monopoly does not spell justice or fairness or philanthropy to the American people.

To sum up. Between here and South America, to carry our great commerce amounting annually to more than \$288,000,000, we have no American ships. The American flag is but a memory in the ports of the great continent south of us. We have to depend entirely upon foreign ships. These foreign ships are slow, irregular and antiquated. Only one line attempts to give a regular schedule service. Our European competitors have fast, regular lines composed of modern ships. The rates on the inferior ships from here to South America are as high as the rates from here to Europe and from Europe to South America combined, although that distance is almost twice as great. These foreign steamship lines form an absolute monopoly that fixes freight rates at will. So completely do they control the situation that more than one-fourth of the vessels from South America that come to our ports arrive in ballast. The rates to-day between here and South America, as fixed by this combine of foreign ships, all things considered, are the highest in the world. This combine gives rebates and other privileges to favored shippers. It demands that its shippers shall not patronize any vessel outside of the combine on penalty of forfeiture of rebates and of refusal thereafter to accept any freight from such shipper. These vessels take from twenty-five to thirty days to go from New York to Buenos Aires; when it should be done in from fifteen to seventeen days. The mail is carried so irregularly as to be most destructive of business. And the passenger service! The best passenger ships in these lines sometimes have lemons on board for twenty-four hours after leaving port. Sometimes they even have the luxury of matches for the greater part of the voyage. Sometimes they have as high as one towel a day in the best state-rooms, and this unusual luxury can usually be obtained after 11.30 a. m. And then the extravagance of it,—they have sheets. It is true that they are short, but they are at least as wide as the berth. And then again these magnificent vessels in that frigid region are so constructed without insulation, and without ice, and without electric fans, that the first-class passengers in the best state-rooms can revel in the joy, not only of the heat of a tropical sun, but also in that furnished by the engine and boilers of the vessel. And you can secure all this comfort and luxury and pleasure at the same price that you can travel from here to Europe and from Europe to South America, although the distance



by that way is almost double. You can make the trip if you are lucky on one of these splendidly appointed vessels directly between here and South America almost as quickly as you make the trip by way of Europe from South America to this country. No wonder at the glowing encomiums of our nameless writer when you calmly and dispassionately contemplate these facts. And *mirabile dictu!* "It is all done without ship subsidy."

I cannot close this article without calling attention to one other statement made by this writer. He says:

"Is not our tariff 'in restraint of trade' with South America? Is not its 'spirit' to buy the least possible from a customer to whom we insist upon selling much?"

In this statement, as in his statements in regard to shipping facilities, he is unfortunate and oblivious of the facts. Do we do all the selling between here and South America? Is all the trade in our favor as he would have you believe? Look at these figures. During the year 1910 we bought from South America goods of the value of \$196,164,786. During that period we sold to South America \$92,525,218. Do these figures show that we want to sell everything and buy nothing? If the writer had searched the whole field of our foreign commerce he could not have found a more striking illustration to confound his own statements. And still more absurd is his insinuation when he says, "Is not our tariff in restraint of trade." Eighty-eight and one-half per cent of our imports from South America last year were on the free list. Certainly the tariff was not "in restraint of trade" so far as that portion of it was concerned. It seems almost as if your contributor had hunted for an absolute demonstration of the folly of his argument that our tariff is in restraint of trade when he selected South American commerce. Here, of all places, the free trader finds the least comfort. Here where our tariff is least we sell the least. Here where our free list is largest our exports are the smallest. With practically free trade with South America on our side she rewards us by selling much and buying little.

Let me repeat that if this anonymous writer had studied with care the entire commercial history of this country he could not have selected an illustration that so completely contradicts and discredits his statements as to the shipping conditions and the effect that our



tariff has upon our trade as the one he did select in using South America. Did he realize this was true and for fear that the facts would be told in answer wish to withhold his name, or has he been misled by the foreign interests that are antagonistic always to any efforts of the American people to increase our trade with South America? In any event, either by design or accident, he certainly showed his wisdom when he insisted that his communication be placed in the orphan class and without a guardian.

## BOOK DEPARTMENT

### NOTES

**Alston, L.** *Elements of Indian Taxation*. Pp. ix, 115. Price, 75 cents. New York: Macmillan Company, 1910.

This little volume is not only a thoroughly interesting monograph on the phases of public revenue in British India, but it is also a rather careful resumé of the general principles of taxation which form the basis of the English system. One of the most interesting features is perhaps the constant contrasting of Indian taxation with that of the parent government. In a prefatory chapter the principles of taxation in general are discussed with a clarity that is very welcome in these days of rather abstruse reasoning.

The author deals in concrete facts, and his descriptions are in the main clearly put, though he sometimes leaves the reader at a point where a little more detail would be desirable. On the whole,—an excellent monograph on a particular subject.

**Avebury, Lord.** *Marriage, Totemism and Religion*. Pp. ix, 243. Price, \$1.25. New York: Longmans, Green & Co., 1911.

Some forty years ago, the author of this book, then known as Sir John Lubbock wrote a volume on "The Origin of Civilization and the Primitive Condition of Man." Since that time our knowledge of these subjects has greatly widened, and now Lord Avebury, believing that his earlier conclusions have in the main been verified, writes this book as an answer to his critics. He, therefore takes up the various writers and seeks to estimate the worth of their contributions and criticisms—how successfully will depend on the viewpoint of the reader. From the nature of the case the volume will be of less interest to the general reader because so disjointed and critical; to the special student it will be of great interest.

Lord Avebury, thorough-going evolutionist, believes that in early times, even our most important social institutions did not exist, but came gradually into being. The present volume has six chapters: (1) On the Absence of Marriage Amongst the Lowest Races of Mankind; (2) On the Origin and Evolution of Marriage; (3) Totemism; (4) Witchcraft and Magic; (5) and (6) Religion.

**Barrett, John.** *The Pan-American Union—Peace, Friendship, Commerce*. Pp. 254. Washington, D. C.: Pan-American Union, 1911.

The director of the Pan-American Union, the Honorable John Barrett, has done a real service in bringing together in so small a volume the speeches delivered at the dedication of the new building, together with much additional valuable information concerning the part which the Latin-American countries have played in the movement for international peace and good-will. The work contains a list of the arbitrations to which the countries of America have been parties, and also a list of the arbitration treaties entered into by

the American republics. Through this publication the director of the Pan-American Union is carrying one step further the education of public opinion in the United States.

**Bernard, L. Lee.** *The Transmission to an Objective Standard of Social Control.* Pp. 96. Price, \$0.56. Chicago: University of Chicago Press, 1911.

**Carter, C. E.** *Great Britain and the Illinois Country, 1763-1774.* Pp. ix, 233. Price, \$1.50. Washington: American Historical Association, 1910. This volume was awarded by the American Historical Association the Justin Winsor Prize in American History in 1908. The monograph deals with the legal, political and economic relations between Great Britain and the Illinois Country during a period just prior to the Revolution. It embodies the results of the author's investigations in a field which only recently has attracted the attention of trained historical investigators. It is based not only upon the available published material, but in large part on manuscript sources found in the various archives of this country, Canada and England, and in consequence throws much new light upon this important subject. It is fully documented, being supplemented by numerous notes and an appendix. Particular note should be made of the excellent critical bibliography which supplements the work and which is one of the requirements of all essays submitted in competition for the prizes of the association.

**Chapin, F. S.** *Education and the Mores.* Pp. 106. New York: Longmans, Green & Co., 1911.

**Drage, G.** *The Imperial Organization of Trade.* Pp. xviii, 374. Price, \$3.50. New York: E. P. Dutton & Co., 1910.

**Farrand, Max (Ed.).** *The Records of the Federal Convention of 1787.* Three vols. Pp. xxv, 1958. Price, \$15.00. New Haven: Yale University Press, 1911.

**Fenton, Frances.** *The Influence of Newspaper Presentations upon the Growth of Crime and Other Anti-Social Activity.* Pp. 96. Price, \$0.56. Chicago: University of Chicago Press, 1911.

**Forbes-Lindsay, C. H.** *Panama and the Canal To-Day.* Pp. xiii, 433. Price, \$3.00. Boston: L. C. Page & Co., 1910.

This is an entertaining account of the canal enterprise as it stood in 1909. The volume gives a brief history of the unsuccessful efforts of the De Lesseps Company to build the canal; of the investigations made by the United States to decide whether to construct a Nicaragua or a Panama Canal; of the acquisition of the Panama route by the United States; and of the successful progress of the work since 1904. Over half of the book is concerned with the country and city of Panama,—with their history and present condition. The book may be read to advantage by those wishing a superficial knowledge of the country and the canal.

**Garcia, G. (Ed.).** *Documentos Para la Historia de Mexico—Paredes y Arrillaga.* Pp. 266. Mexico: Ch. Bouret, 1910.

In the thirty-second volume of documents illustrative of Mexican history, the papers of one of the revolutionary governors of the early 40's are published. These papers are particularly interesting because of the fact that they indicate the anarchical conditions that prevailed in that period. Sectional strife rent the country asunder and paved the way for the series of dictators who were welcomed by the property owners as the only possible escape from the terrors of war.

**Garcia, G. (Ed.).** *La Intervencion Francesa en Mexico.* (Reprint of documents from the Archives of Field Marshal Bazaine.) Pp. 264. Mexico: Ch. Bouret, 1910.

Mr. Genaro Garcia has done a great service to students of Latin-American history in the publication of a series of volumes containing important documents relating to Mexican history. In the thirty-third volume which has appeared recently a selection has been made from the papers of Field Marshal Bazaine, the commander-in-chief of the French forces in Mexico during the intervention. These papers throw much light on the military aspects of the French invasion. Incidentally, Marshal Bazaine makes many interesting comments on the political conditions of the time.

**Greenwood, A.** *Juvenile Labour Exchanges.* Pp. xi, 112. Price, 1s. London: P. S. King & Son, 1911.

**Hart, H. H.** *Cottage and Congregate Institutions for Children.* Pp. xii, 136. Price, \$1.00. New York: Charities Publication Committee, 1910.

The author is director of the Department of Child Helping of the Russell Sage Foundation. This little volume is intended for the use of trustees and officers of institutions for children. There are four chapters: "How to Organize a Children's Institution"; "Plans for a Children's Cottage with Outdoor Sleeping Porches"; "A Study of Fifty Cottage and Congregate Institutions"; "Statistics of Cottage and Congregate Institutions." It will be found very helpful for the purpose.

**Hart, H. H. (Ed.).** *Juvenile Court Laws in the United States.* Pp. vii, 150. Price, \$1.50. New York: Charities Publication Committee, 1910.

In view of the fact that Dr. Hart wrote the first draft of the Illinois Juvenile Court Law, it is very appropriate that he should have had general oversight of the present book. There are three parts. In the first Thomas J. Homer summarizes existing laws in the different states. In the second Miss Grace Abbott tells of the powers, methods, etc., of the courts, and in the third is reprinted the Monroe County, New York, Juvenile Court Law of 1910, which is considered a model for cities of the second class. In view of the interest in such courts the information presented is timely and valuable.

**Hirst, F. W.** *The Stock Exchange.* Pp. 256. Price, 75 cents. New York: Henry Holt & Co., 1911.

This is a short study of investment and speculation with a chapter describing the London Stock Exchange, and a similar one on Wall street. The remaining chapters deal with the early history of banking and stock jobbing, London's foreign market and the foreign bourses, the art of investment, speculative securities, why prices rise and fall, and the creation of new debt and capital, with a final chapter on cautions and precautions. The last chapter is the best, especially in regard to the criticism of newspaper information.

**Hollander, Jacob H.** *David Ricardo—A Centenary Estimate.* Pp. 137, Baltimore: Johns Hopkins Press, 1910.

This estimate of the influence of the great English economist of the Classical School has been published on the hundredth anniversary of the issue of the "High Price of Bullion," the first formal contribution of Ricardo to economic writing. Professor Hollander treats in comprehensive and sympathetic manner the life, the work, and the influence of Ricardo, after he has shown "the background of affairs and thought against which that life and work are projected." The author reviews the agricultural ferment, the industrial expansion and the financial activity which characterized the period, as preliminary to his main theme. This publication is of the greatest interest to all students who desire to get at the foundations of economic science.

**Husband, Joseph.** *A Year in a Coal Mine.* Pp. 171. Price, \$1.10. Boston: Houghton, Mifflin Company, 1911.

The author, following his graduation from Harvard, entered one of the large bituminous coal mines of the middle west and spent a year to become acquainted with the actual work of coal mining. His first work was shoveling the coal into a car for which he was paid at the rate of twelve and a half cents a ton. His fellow workmen were almost entirely foreigners and the picture of their hopes and life plans is cleverly drawn.

The author seems to have crowded into this year a whole life story of a miner. One day the mine was working smoothly and gave up almost a record out-put. That night a fire broke out which it was impossible to check. The mine was sealed in the hope that, when the supply of oxygen was exhausted, the fire would be extinguished. Then follows the thrilling story of perilous descents down the air-shaft, the experiments to detect the presence of the deadly white-damp, the gradual reopening of the mine until the final explosion left but one person alive in the mine and he was rendered insane. Then is portrayed the harrowing picture of the scenes at the mouth of the mine, the search for the bodies, another fire in the workings and the permanent abandonment of the mine. It is not often that a man who is able to tell a story as clearly and vividly as this has crowded so many experiences into one year. It seems to be rather the life story of a mine than of a miner.

**Hutchinson, Woods.** *The Conquest of Consumption.* Pp. 138. Price, \$1.00. Boston: Houghton, Mifflin Company, 1910.

Dr. Hutchinson is an optimist in the fight against tuberculosis. In this little

volume, the first chapter of which is "A Message of Hope," he reveals the grounds of his optimism in a very interesting and concrete manner. In his opinion, knowledge of the tubercle-bacilli; their nature and habits, has made it possible to keep them out of our bodies by proper care. Furthermore, if some enter they do so at their peril if the body defenses are in good working order. The author makes very clear the need for keeping the bodily functions fit to combat enemies. He describes in detail the attack upon the invading bacilli and shows how the fighting is done mainly by "good food, fresh air, healthy houses, shorter hours, longer sleep, good wages, and more play"—all of which keep the body in good fighting trim. Thus the author devotes a chapter to each of the following topics: Sunlight, the Real Golden Touch; Food, the Greatest Foe of Consumption; Intelligent Idleness; The Camp and the Country; Cash and Consumption. The book is readable and presents in the author's usual striking manner, the conviction that tuberculosis is being conquered by science and common sense, worked out in public policy and individual effort.

**Ilbert, C. P.** *Parliament; Its History, Constitution and Practice.* Pp. 256. Price, 75 cents. New York: Henry Holt & Co., 1911.

For a generation Sir Courtenay Ilbert has acted as draftsman of the bills presented by the Cabinet to the English House of Commons. More than any other man he has had an opportunity to come in contact with the inside working of Parliament. All students of comparative government will find this sketch indispensable. It brings into small compass both historical development and present practice. Especially valuable for their contrast with our own haphazard methods of legislation are the chapters describing the legislative expedients adopted to protect the national purse from log rolling and extravagance in general and the discussion of the drafting of bills. The sketches of the relations of the houses, the cabinet and the development of true parliamentary responsibility are excellent. The controversy over the powers of the House of Lords is brought down to the election of December, 1910.

**Lampe, W. E.** *The Japanese Social Organization.* Pp. ix, 84. Price, \$0.50. Princeton: Princeton University Press.

**Landa, M. J.** *The Alien Problem and Its Remedy.* Pp. xv, 327. Price, 5s. London: P. S. King & Son, 1911.

It is most interesting at times to get side-lights on our own problems by seeing how other people react to similar situations. For the last fifteen years or so England has been agitated over the question of immigration. Exclusionists have risen to power and the public has heard all of the arguments, so familiar here, based on over-crowding, standard of living, crime, etc.

In this volume the author holds a brief for the immigrant and offers evidence to show his value to the country. He first gives a very good summary of the agitation for restriction. Then he takes up the various problems. It will interest Americans to discover that immigrants from America are most



prominent in the criminal records. The latter part of the book deals with the legislation enacted, its improvement and suggested reforms. It closes with an appeal for a broader attitude.

The book will be found of interest and value by all who are studying either English developments or our own problem of immigration.

**MacIlwaine, S. W.** *Medical Revolution*. Pp. xiii, 162. Price, 2s. 6d. London: P. S. King & Son, 1911.

**Mussey, Henry R. (Ed.).** *The Economic Position of Women*. Pp. 193. Price, \$1.50. New York: Columbia University Press, 1910.

A collection of papers by different authors discussing some of the proposed means of solution of the question of the economic position of women.

**Mussey, H. R. (Ed.).** *The Reform in the Currency*. Pp. 295. New York: Columbia University Press, 1911.

Papers constituting the proceedings of the Academy of Political Science in the City of New York, November 11 and 12, 1910.

**Perris, G. H.** *A Short History of War and Peace*. Pp. vi, 256. Price, 75 cents. New York: Henry Holt & Co., 1911.

It is the author's purpose in "limiting this essay to a consideration of certain fundamental principles of organic growth" to trace the history of war and peace through the ages and in conclusion to sum up the characteristics of the present situation. Selecting the salient features he leads us from the earliest societies through the great Asiatic and African river civilizations. The Greeks, the Jews and the Empire of Rome are passed in review; the reasons for the breakdown of feudalism and the exploration of lands beyond the seas are explained; for a time the adoption of the principle of the balance of power gives Europe a certain security until Napoleon as the exponent of the latent impulses in the hearts of the people destroys the whole fabric until at last we have a "new equilibrium" between the allies of Germany and those of Great Britain. In spite of the possibility of universal bankruptcy and the other evils which this system of armed peace carries in its train, four factors make for the organization of peace (pp. 227-252): First, "the advance in the quality and quantity of armaments"; second, "the establishment of an international credit economy"; third, "international organizations"; fourth, "the general tendency among Western nations towards an arrest of population."

The book is extremely interesting and instructive and contains the condensation of an immense amount of information in a small space and—what is rarer—in a very readable form.

**Ralston, J. H.** *International Arbitral Law and Procedure*. Pp. xix, 352. Price, \$2.00. Boston: Ginn & Co., 1910.

**Richman, I. B.** *California Under Spain and Mexico, 1535-1847*. Pp. xvi, 541. Price, \$4.00. Boston: Houghton, Mifflin Company, 1911.

**Salley, A. S. (Ed.).** *Narratives of Early Carolina, 1650-1708.* Pp. xi, 388.

Price, \$3.00. New York: Charles Scribner's Sons, 1911.

This is the eleventh volume to appear in the series of "Original Narratives of Early American History." The editor is the secretary of the Historical Commission of South Carolina. The plan followed in this, as in the preceding volumes, is to reproduce the original document faithfully, and to precede each paper with a brief introduction telling something of the author and giving an estimate of the historical importance of the document.

Among the seventeen "narratives" contained in the volume are "The Discovery of New Brittain, 1650," by Bland and others; Yeardley's "Narrative of Excursions into Carolina, 1654;" "A Relation of a Discovery by William Hilton, 1664;" "Carolina, Or a Description of the Present State of that Colony by Thomas Ashe, 1682;" "Party Tyranny, by Daniel De Foe, 1705;" and a long selection from "The History of the British Empire in America, by John Oldmixon, 1708." There are facsimile reproductions of Blome's "Map of Carolina, 1672," and of Crisp's "Plan of Charles Town, 1704."

**Senator, H., and Kaminer, S. (Ed.).** *Marriage and Disease.* Pp. ix, 452.

Price, \$2.50. New York: Paul B. Hoeber.

The twenty-seven chapters of this volume were contributed by some twenty German doctors, many of them being prominent men in their profession. The subjects covered are of wide range and of great importance. The result lacks unity, however. Some of the writers are posted in recent biology, others are not. Some of the sections are too general to be of any special value to the practitioner, but yet too technical for the general reader. The student who wants to know a little of the relation of insanity, alcoholism or various diseases to married life will get some valuable suggestions. The medical man will turn naturally to the larger volume of which this is an abridgment. The translator, J. Dulberg, of Manchester, England, has done his part very acceptably.

**Shaw, Bernard.** *The Commonsense of Municipal Trading.* Pp. xii, 120.

Price, 75 cents. New York: John Lane Company, 1911.

This little volume is one of a series issued by the Fabian Socialist Society of England, and deals very clearly and cleverly with the problem of, what in England is called, municipal trading and in the United States municipal industrial enterprise. It is not so much what Shaw says, as the way he says it that makes his monograph interesting. To a student of municipal trading there is little new in the way of argument or illustration, but as usual with Shaw, the arguments are carried to the extreme and even the most ardent opponent of municipal trading is forced to agree to the logic of the discussion. It is in short a rather sparsely written but emphatic endorsement of municipal trading, from the English standpoint.

**Steiner, E. A.** *Against the Current.* 2d ed. Pp. 230. Price, \$1.25. New York:

F. H. Revell Company, 1910.

Dr. Steiner may well be envied by authors for in his own life there seems

to be an inexhaustible supply of literary material. Writing in his own happy and humorous style he here tells the story—in disconnected fashion, to be sure, of his early life. Fascinating chapters they are. A Jewish boy in Hungary, in the midst of conflicting races and faiths, passing through the turmoil of varying standards and ideals to the larger life of manhood. Filled with a great breadth of sympathy for all men, the result perhaps of these very conditions of early life; inspired evidently by the marked insight of a wise mother; the author holds the reader with rare power. The book makes a strong appeal.

**Taylor, F. W.** *The Principles of Scientific Management.* Pp. 144. Price, \$1.50. New York: Harper & Brothers, 1911.

The appearance of this volume, written by the one generally recognized as the father of scientific management in business, is most timely. The book is, to a considerable extent, a restatement of the principles enunciated by its author in various magazine articles and contributions to scientific journals which have appeared in the past. The author, however, has taken advantage of this opportunity to bring these discussions down to date, and to introduce much material which he has not hitherto presented. The volume is evidently intended as a discussion of the theories of scientific management rather than a description of the methods by which these theories are to be applied in practice.

**Taylor, F. W.** *Shop Management.* Pp. 207. Price, \$1.50. New York: Harper & Brothers, 1911.

The appearance of a revised edition of this work as a companion to the author's "The Principles of Scientific Management," which has just come from the press, enables the student to secure a complete understanding of the "Taylor System" as it exists at the present time. The revised edition is practically identical with the first edition published in 1903, except that a number of illustrations have been added, drawn from the recent experience with the system, and some additional time-study data have been inserted.

**Thomson, J. Arthur.** *Darwinism and Human Life.* Pp. xii, 245. Price, \$1.50. New York: Henry Holt & Co., 1910.

In this volume the author, who is professor of Natural History in the University of Aberdeen, reproduces a series of lectures given in South Africa in 1909. Inasmuch as it was Darwin's centenary his work was taken as the center of the course. The result is not merely a great tribute to a great man but a volume of exceptional interest in itself. "What We Owe to Darwin;" "The Net of Life" (i. e., influence of environment on living beings); "The Struggle for Existence;" "The Raw Materials of Progress;" "Facts of Inheritance;" "Selection, Organic and Social," are the chapter headings and accurately indicate the scope of the book. Written in a most attractive style it is a splendid discussion of the development of our knowledge of nature's methods which will be read with zest by all wishing to know something of the process of evolution. I cannot commend it too highly.

**Ward, G. H. B.** *The Truth About Spain.* Pp. xiii, 292. Price, \$2.00. New York: Cassell & Co., Ltd., 1911.

We have long waited for a book about Spain which would adequately describe the actual conditions, political, social and economic. We must still wait. Mr. Ward's book is highly interesting summer reading. It describes the abuses which impress every visitor to the Peninsula, but there is no perspective. The material is fugitive and though it does tell the truth about the cases described, it does not tell the truth about Spain. It would be quite as unfair were an author to write about the United States from the background of a study of Tammany, the New York customs frauds and the conditions of travel and agriculture in our southern states. In his statement of fact there are few exaggerations but the relation of the facts in any particular case to the typical case is missed. For example, one who has England in mind can hardly castigate the Spanish farmer as a ne'er-do-well because Argentine and Russian wheat competes with the native product. Slow though Spanish freight trains be, it should not "be considered a marvel" if they seldom run "on an average twenty miles an hour"—at least one making that average speed in the United States would also be a marvel.

Taken as fugitive, illustrative material this is a good book. It portrays the abuses in education, customs, clerical establishment, "alternating ministries" and bossism in politics more clearly than any of the many recent discussions. For one who wants to learn about the abuses found in Spain to-day this is the book.

#### REVIEWS

**Abbott, Lyman.** *The Spirit of Democracy.* Pp. vi, 215. Price, \$1.25. Boston: Houghton, Mifflin Company, 1911.

In this volume, Dr. Abbott has published in a somewhat amplified and extended form the substance of a series of lectures which he delivered before the Brooklyn Institute of Arts and Sciences during the winter of 1909-10.

Inasmuch as a great variety of subjects are discussed in the twelve chapters which compose the book, it is not surprising that a considerable part of the material presented makes very "thin" reading. Especially is this true of the first five chapters which deal with "The Birth of Democracy," "The Tendency of Democracy," "The Pagan and Hebrew Ideals of the Family," and "The Evolution of Education." In the last-mentioned chapter the author, strange to say, since he is writing of Democracy, omits all mention of the very important part played by the working class in the establishment of the free public school system in the United States. The strongest parts of the book are found in those chapters devoted to "Present Conditions in Industry," "Political Socialism," and "Industrial Democracy." In fact, so strong and radical is their tone that the reader is constrained to turn back to the title page to see if it really is the editor of "The Outlook" who is responsible for them. Dr. Abbott does not mince his words at any point of the discussion.

The author condemns the wages system in no uncertain terms: First, because it has divided society into two fairly distinct classes, the employing and the employed; second, because it has made possible the concentration of wealth; and third, because it has aided in the creation of a pauper and a criminal class. In replying to the question "Is there any remedy for existing evils?" he boldly asserts that he does not believe "that either regulation or gradual moral reform or charity will set the world right." "I do not believe," he continues, "that the evils of our present industrial system will be cured by anything less than a radical change—though it may be, and I think it will be, a gradual one." The reader feels that Dr. Abbott is about to declare for Socialism and is somewhat surprised, unless he knows the author from his past works, to find that instead of Socialism he merely proposes that indefinite sort of hybrid of all reforms and Trade Unionism commonly known as "Industrial Democracy." What is meant by this is more definitely expressed by his desire "to see a state of society in which there will be few or no capitalists who do not have to labor, and few or no laborers who are compelled to remain all their lives without becoming capitalists, a state of society in which no man will live on the fruits of another man's labor, and no man will be denied the fruits of his own labor." As co-operating movements towards this goal he enumerates "conservation, the single tax, the growth of corporations, the beginnings of profit-sharing through stockholding, the development of the industrial virtues—thrift and temperance—and of industrial intelligence and the growth of labor unions."

Socialism is condemned by Dr. Abbott, not because it "is an impossible ideal," for he holds that all true ideals are possible, but because it is no ideal at all. He brands it as being opposed to industrial and individual liberty, and destined, if ever tried, to prove injurious and unjust to all concerned, an industrial servitude to a new master, the State.

The volume is written in Dr. Abbott's inimitable style, direct and very much to the point. However, with the exception of the three vigorously written chapters, as above noted, it contains little that merits comment. It is difficult, very difficult, in this day and time in discussing Democracy, to say anything new or to say anything very much worth while that has not already been said many times in as many different ways.

IRA B. CROSS.

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**Alvarez, Alexandre.** *Le Droit International American.* Pp. 386. Paris: A. Pedone, 1910.

Professor Alvarez, formerly of the University of Chile, presents a review of American international law which is sure to arouse much interest especially in the United States. His point of view is Latin-American and the discussions on that account treat the subject from an angle different from that to which we are accustomed.

Publicists, it is asserted have overlooked or underestimated the impor-



tance of America as an element in the development of international law. This is especially the case on the continent where the idea of a code of international law bearing equally upon all nations and upon all parts of the earth has gotten the ascendancy in the public mind. The true point of view is one more nearly approaching that of the Anglo-Americans who look upon international law as a body of rules based on practice rather than theory—something which must therefore be flexible to allow it to fit the needs of the various countries and regions of the world.

If this thesis be true there is ground for the study of those peculiar factors which have made America important in the history of international law. Chief among these new influences the author discusses are the different points of view which developed in Europe as to the relations of colony and mother country, the effect of the development of the American colonial systems upon European politics and international relations, the causes of the emancipation of the American—especially the Latin-American states, the entry of America into the community of states; its influence on the balance of power in Europe and the influence of the example of the United States upon the states of Latin-America.

We too often consider American history—at least American history since 1775 as synonymous with the history of the United States. How partial such a view is, is well brought out in the discussion of the various efforts for united action among the Latin-American states from the Panama Congress to the Pan-American Congresses, the boundary disputes, arbitrations, civil wars, wars between Latin-American nations and with European countries. All these furnished the basis from which that mass of precedents is drawn which forms American international law. Most important of all of course is the Monroe Doctrine which the author characterizes as the basis of American international law. He believes it is a doctrine not confined to the United States but one whose principles all western states uphold. Many of its elaborations which declare the United States to have the hegemony of the Americas are repudiated. These are merely declarations of policy by the United States and form no part of American international law. This latter portion of the book is the most valuable for students in the United States. It gives an outside, critical but sympathetic interpretation of a doctrine which is fundamental in our foreign policy.

CHESTER LLOYD JONES.

*University of Wisconsin.*

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**Brown, David W.** *The Commercial Power of Congress.* Pp. ix, 284.  
New York: G. P. Putnam's Sons, 1910.

This is a scholarly presentation not only of the origin and original meaning of the commerce clause of the United States Constitution, but of the facts proving that the framers of the Constitution intended to establish a strong national government. The author points out that the large majority of the members of the constitutional convention were thorough-going nationalists. They represented the conservative moneyed classes; they were much alarmed



by Shays' rebellion and the other disorders that shortly preceded the convention in Philadelphia. These events caused such advocates of state rights as Richard Henry Lee, Elbridge Gerry and Charles Pinckney to "favor the erection of a central authority independent of the states and vested with great powers."

The first three chapters of the book recount the efforts made before 1786, in Congress and out, to give Congress greater power over commerce; then follows a very suggestive chapter upon the influence which the development of the West had upon the sentiment of the country in favor of a larger national power over commerce. The work of the Annapolis convention is briefly described and the work of the constitutional convention is considered with special reference to the development and formulation of the commerce clause. The struggle in the states for the adoption of the Constitution, with this clause included, is briefly told. There is a chapter upon the first tariff bill and the incorporation of the first bank of the United States; this is followed by a discussion of the records of commercial legislation in Washington's second administration, and an account of the non-importation and embargo laws for which Jefferson was responsible. The volume closes with a discussion of the effects of the decision of the United States Supreme Court in *McCulloch vs. Maryland*, 1819, and *Gibbons vs. Ogden*, 1824. The significance of these early decisions of the Supreme Court is pointed out by referring to the recent decisions that have greatly widened the scope of the commerce clause. There are two appendices to the volume, the first one containing an essay upon the power of Congress to construct, or authorize the construction of, internal improvements; the second appendix reviews the power of Congress to levy protective tariffs.

EMORY R. JOHNSON.

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**Bruce, Charles.** *The Broad Stone of Empire*. Two vols. Pp. xlii, 1066. Price, \$9.00. New York: Macmillan Company, 1910.

Sir Charles Bruce, after nearly forty years spent in colonial administration, has devoted his later years to correlating and summarizing the results of such experience and now presents in book form his numerous papers and addresses, so remodeled and amplified as to constitute a general survey. Regretting with Lord Milner, "the plentiful lack of thought devoted to even the biggest problems of our Empire, and especially to the biggest problem of our Crown Colonies," the book is presented as "a contribution to a thorough study of the administration of our tropical dependencies—our Crown Colonies and Places." No attempt is made to discuss conditions either in the self-governing colonies, called dominions by the author, or in India; attention is centered exclusively upon the Crown Colonies, most of which are tropical. Having variously served his country in Mauritius, Ceylon, the Windward Islands, and British Guiana, the writer is prepared to speak with authority upon the problems of Crown Colonies, which he summarizes as "problems of an appropriate form of government, appropriate laws, an appropriate population, appropriate methods of development, appropriate fiscal

systems, and an appropriate scheme of defense." The leading topics discussed are the Colonial Office; local self-government; labor, health, and disease; education; the conservation of resources; fiscal systems; and defense. Each is treated both with reference to peculiar conditions in individual colonies and to determining how far common custom may be applied to all the colonies.

In a chapter on "Our Colonial Policy" Sir Charles lays bare the many mistakes and the general inefficiency of the Colonial Office in the early years of English colonization. "Of an organized system of emigration, neither the Colonial Office nor the community had the slightest conception." "The ultimate success of the art of colonization was directly due to the Colonization Society." In this society, organized in 1830, originated a system of colonization since "embodied in our imperial policy" and vigorously advocated by Charles Buller in parliament. Buller declared that the portals of the Colonial Office should bear the inscription *All hope abandon ye who enter here*, and Gibbon Wakefield later maintained, after New Zealand and South Australia had been successfully colonized under the new system, that these colonies had been formed "in spite of the most formidable opposition from the Colonial Branch of the Government of the British Empire."

For the American student the work performs a valuable service in presenting a broad view of British tropical dependencies, with their problems, and the author's theory of the principles to be followed in administration. The title used, *The Broad Stone of Empire*, is meant to indicate one of these principles. Quoting Alexander Hamilton to the effect that civil liberty is the greatest of terrestrial blessings, and that it cannot ultimately be denied to any portion of the human race, Sir Charles Bruce states that he accepts this declaration "as the only foundation upon which the superstructure of Empire can securely rest." His work becomes then a study of basic political principles and of the extent to which they can be applied, as determined by policy and expediency, in the various tropical dependencies.

EPHRAIM D. ADAMS.

*Stanford University.*

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Chiral, V. *Indian Unrest*. Pp. xvi, 371. Price, \$2.00. New York: Macmillan Company, 1910.

India is so markedly the center of English imperialistic thought that anything which tends to loosen the bonds between the dependency and the mother country is sure to arouse unusual interest and anxiety in England. Mr. Chiral's analysis, originally appearing as a series of articles in the *Times* is from its thoroughness one which the English public and all those interested in World Politics will find particularly welcome.

The criticism of Indian conditions covers practically all sections of the country from the Punjab and Calcutta to the extreme south. There is a command of detail in describing the regional, social and racial unrests which makes the facts presented convincing. The dissatisfaction of India rests largely on factional or local reasons. There is no unity among the various groups except in their prejudice against government. For the time being

with the increased power granted to the Indian constitutional reformers and the severe measures for the repression of lawlessness, there has come a lull in the storm which may be semi-permanent unless foreign complications arise to fan the flame of disaffection again. Fortunately this for the present seems unlikely due to the Persian agreement with Russia, though Cabul and Thibet still are quarters from which trouble may come.

But after all, the quiet which now seems about to settle over the country cannot be permanent. India has assumed but not assimilated western ideas. Many whose positions will be threatened by modern thought will always be a party of opposition if not of revolt. Education, intellectual rather than industrial has aroused in the native ambitions which cannot be gratified at least not until economic conditions are revolutionized,—and even this is a circumstance that must bring untold suffering before the transformation will be completed. The example of Japan in the east and the exclusion of the Asiatics from South Africa tend to arouse nationalist ambitions and to embitter the people against England. Reactionary Brahmanism and half-baked western education, contrasted in everything else are both anti-English. All these conflicting influences and many more it is the task of the Englishman to reconcile. Unfortunately this cannot be done by the grant of self-government—the safety valve which diverts criticism in the white colonies. Such action would be not only against English prejudices but would deliver power in India into the hands of the strongest and mark the return of the anarchy which it is the main object of England to avoid.

The first third of the book dealing with the details of the riots, murders, and general unrest in the various sections of the country is of decidedly less interest than the latter portion dealing with the real constructive work which England is doing and the problems which face her in attempting to improve conditions at present unsatisfactory to all concerned.

CHESTER LLOYD JONES.

*University of Wisconsin.*

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**Collier, Price.** *The West in the East from an American Point of View.* Pp. ix, 534. Price, \$1.50. New York: Charles Scribner's Sons, 1911.

Anyone who has read Mr. Collier's *England and the English* will expect this book to be interesting and in parts disquieting. The first portion of the book seems like a middle term between the alarmist writings of Homer Lea, and the pacific prophesies of Mr. Stead. Mr. Collier declares, with an exasperatingly clever array of statistics that the Anglo-Saxons must face inevitable conflicts with Germany and Japan at least. Both countries must expand. Traditional foreign policy and economics show that expansion of the sort which these countries will expect cannot be peaceful. English self satisfaction in foreign affairs is especially subject to reprimand.

The point of view of the first chapters shows the tone of the book. We are led through India, China, Japan and Korea and though Mr. Collier seldom takes us far from the beaten track of tourists he sees more than the average traveller and he has a remarkable, though one feels at times an overstrained

facility in correlating what he sees with the problems of world politics. The households of English officials in India, quick climatic changes, class hatreds and a host of present day impressions are followed by a brief review of India under the Great Mogul and the transfer of control to "John Company." Incidentally the usual criticism is made of the English administration—it is unsympathetic and slow to move. The next third of the book is given to light but interesting chapters of comment on the daily life of the westerner in the far east, the foibles of the native princes, who are cleverly pictured as counterparts of our own over-rich, the street life of Calcutta and a good popular discussion—the best chapter in the book—showing the part played in the east by the Chinese who have left China.

Japan, Korea, and Manchuria are given only a hundred pages all told and little is added to what has been told by many writers before. The conclusion brings us round again to the author's main contention: our relations with foreign countries are changing. This is true of the east as well as of the west. Heretofore we have been free to act as we pleased with eastern peoples. Hereafter we must find them worthy competitors in commerce always and possibly in war.

CHESTER LLOYD JONES.

*University of Wisconsin.*

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**De Quiros, C. B.** *Modern Theories of Criminality.* Pp. xxvii, 249. Price, \$4.00. Boston: Little, Brown & Co., 1911.

This volume appears first in the list of books selected for translation and publication by the American Institute of Criminal Law and Criminology. It was written by Señor de Quiros in 1898 and revised ten years later. The translation is made from the edition of 1908.

The title, *Modern Theories of Criminality*, does not describe accurately the contents of the work since a third of the volume is devoted to criminal law and penitentiary science.

As to origins, the author finds that the real forces which have transformed the pseudo-sciences of physiognomy and phrenology into criminology have been psychiatry and statistics. Even without the "great innovators" Lombroso, Ferri, and Garofolo, these methods of research would have produced ultimately a scientific criminology.

The volume is divided into three chapters, better called parts. The first of these is devoted to the origins and development of criminology. The leading theories treated are: I. Anthropological: (1) Atavistic Theories, (2) Theories of Degeneration, (3) Pathologic Theories. II. Sociologic Theories: (1) Anthro-Sociologic, (2) Social Theories, (3) Socialistic Theories. The statement of the various theories is somewhat fragmentary and in the effort to trace back all theories to their original authors the clearness of restatement by later students has largely been sacrificed.

In Part II, the origins, tendencies and applications of criminal law and penitentiary science are discussed. In this field three distinct tendencies are traced, (1) The Traditional, opposing crime only by means of punishment,

(2) The Reformistic, where a "double-entry" penology is planned, advocating the traditional penal measures, only with a repressive aim, and urging preventive measures in accordance with the teachings of modern criminology, and (3) The Radical where the preventive side only is developed. Responsibility and delinquency are elaborately treated.

Part III returns to the field of Criminology and deals with the Scientific Investigation of Crime and methods of identifying criminals as Anthropometry, Dactyloscopy, the Word Portrait, etc.

The author has given us a source book of European Criminology with special application to Spain and Spanish-America. At the absence of American names in the list of contributors to the science of Criminology we have no reason to complain but scant justice seems to have been done to American scholarship in the field of penology.

The volume enriches our literature of criminology and all criminalists owe a debt of gratitude to the American Institute of Criminal Law and Criminology for making the work accessible to exclusively English readers.

J. P. LICHTENBERGER.

*University of Pennsylvania.*

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*Documentary History of American Industrial Society.* Edited by John R. Commons, Ulrich B. Phillips, Eugene A. Gilmore, Helen L. Sumner and John B. Andrews. Prepared under the auspices of the American Bureau of Industrial Research, with the co-operation of the Carnegie Institution of Washington. Volumes VII, VIII, IX and X. Pp. 1458. Price, complete set, \$50. Cleveland, Ohio: Arthur H. Clark Company, 1910 and 1911.

The first six volumes of the "Documentary History of American Industrial Society" were reviewed at length in the September, 1910, issue of *THE ANNALS*. The scope of the entire work was described and an account was given of the origin of the History and of the manner in which it had been prepared. It will accordingly be possible to make this notice of the last four volumes comparatively brief.

Volumes VII and VIII contain documents for the period 1840 to 1860. These two volumes are prefaced by an introduction twenty-six pages in length, written by Professor Commons. This introductory paper is a reprint of Professor Commons' article on "Horace Greeley and the Working Class Origins of the Republican Party," previously published in the "Political Science Quarterly" (Vol. XXIV). It is somewhat difficult to believe that the history of the labor movement from 1840 to 1860 centered so largely about the person and activity of Horace Greeley as Professor Commons' introduction would indicate. One cannot avoid the suspicion that the author became so interested in Horace Greeley's work as to have acquired a somewhat faulty perspective of the events of the twenty-year period. However this may be, Professor Commons' analysis of Horace Greeley's influence and of the economic phases of the political events of the twenty years following 1840 is admirably presented.



Volumes IX and X contain documents relating to the years 1860 to 1880. The introduction to these two volumes was written jointly by Professor Commons and Mr. Andrews. The authors have a clear conception of the relative importance of the events of this period, and this introduction of thirty-two pages must be highly appreciated by every student of the complicated questions to which the general name "labor movement" is applied. These were the twenty years during which the present industrial processes were being adopted and during which the present-day economic and social philosophy was being formulated. The documents contained in these volumes must be read by everyone who would understand the labor movement of to-day.

The editors and publishers are to be congratulated upon the successful completion of this highly important work. Professor Commons and his associates have given an immense amount of time and effort to the collection, transcription and publication of rare and almost inaccessible material. These volumes provide a foundation upon which may be constructed an interpretative history of the labor movement in the United States.

EMORY R. JOHNSON.

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**Duncan, John C.** *The Principles of Industrial Management.* Pp. xviii, 323. Price, \$2.00. New York: D. Appleton & Co., 1911.

The purpose of the book, as stated in the preface, is to give a scientific treatment of industrial management suited for a text-book in schools and colleges. The work is divided into three parts: the first dealing with the economic environment; the second with the equipment of the plant, and the third with its organization and management.

The first part of the volume presents the problems which confront the manufacturer in determining upon the selection of his plant location. It outlines the theory of plant location, pictures the ideal situation and upon this basis endeavors to show the relative weight which should be attached to the various factors entering into the calculation.

The second portion of the book is given over largely to the factors determining plant layout, the differences which various types of industries introduce into plant structure; the importance of fire precaution in factory layout and structure; the value of providing attractive quarters for workers and the power problem.

The discussion of organization and management in part three centers about the various types of organization, the influence of different classes of labor upon organization; the systems of wage payment; the records of employees; time recording systems; raw materials, finished product and equipment accounting.

Covering such a wide field, it is obviously impossible for the author to make a minute study of any particular portion of the subject. As a text-book for schools and colleges it is an acceptable work, which will, no doubt, be gladly received by the teaching profession. Dr. Duncan's discussion of



the subject is illustrated by a multitude of references to the experience of the largest plants in the country.

THOMAS CONWAY, JR.

*Essays in American History.* Dedicated to Frederick Jackson Turner. Pp. vii, 293. Price, \$1.50. New York: Henry Holt & Co., 1910.

This volume of essays is in the nature of a *Festschrift*, being a tribute offered during the recent winter to "Frederick Jackson Turner, teacher, scholar and friend," on the occasion of his presidency of the American Historical Association by several of his former students.

The ten contributors, who are all now college teachers, represent that considerable body of those, "who as students have felt the stimulus of Professor Turner's personality and who under his guidance have learned the method of the craft." Professor G. S. Ford in his felicitous introduction points out that this form of a testimonial was chosen as the more fitting one, as "it preserves and transmits that part of a scholar's work, which is hardest to measure and record—his power to kindle his spirit and his love of scholarship in other men."

Of the ten essays more than half, as might naturally be expected from those who had been privileged to follow the inspiring lectures of the "Historian of the West," deal with different phases of western history. These are contributed by Professors Mathews, Schafer, James, Becker, Hockett and Buck, and their subjects vary from the "Activities of the Congregational Church West of the Mississippi" and "Problems of the Northwest in 1779" to the "Independent Parties in the Western States, 1873-1876." Of the remaining essays, two by Professors Ambler and Phillips, deal with certain phases of Southern political history, and the last two by Professors Robertson and Reinsch relate to South American diplomacy and history.

All save one of the essays are fully documented, the statements of the text are substantiated by a wealth of notes and citation, and present in readable and scholarly form the results of extended research upon the chosen themes. The one unique contribution is the exceedingly brilliant essay by Professor C. L. Becker, simply entitled "Kansas." This is an essay rather than a historical narration, an interpretation of the spirit and determination that actuated the pioneers and settlers of Kansas, a presentation of the ideals and an explanation of the enthusiasm that characterizes its present citizens. There is a rare charm, quiet humor and fine literary quality that lend unusual interest and distinction to this paper.

To the student of party history, Mr. H. C. Hockett's interesting contribution on "Federation and the West," and Dr. U. B. Phillips' illuminating and scholarly review of "The Southern Whigs" will make an especial appeal; while to one interested in diplomacy, Professor Schafer's paper on "Oregon Pioneers and American Diplomacy," and Dr. Robertson's "Beginnings of Spanish-American Diplomacy" will be of decided value. Professor Reinsch, the well-known writer on world politics, contributes some valuable suggestions in his "Notes on the Study of South American History." Limitations

of space forbid further detailed comments. Suffice it to say we heartily indorse the opinion of the Editor that these essays are "each a permanent contribution either in substance, point of view, or interpretation, to the literature of American history," and a worthy tribute to the inspired and inspiring scholar in whose honor they have been published.

HERMAN V. AMES.

*University of Pennsylvania.*

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**Fairchild, Henry P.** *Greek Immigration to the United States.* Pp. xvii, 278. Price, \$2.00. New Haven: Yale University Press, 1911.

This monograph is a valuable addition to the rapidly growing volume of literature on immigration. Greek immigration to the United States in numbers sufficient to attract attention did not occur until about 1900. The first year in which the figures reached 10,000 was 1903. In 1907 the number reached 46,283. A decrease followed the panic of 1907 but the tide has again turned, the arrivals last year (1910) numbering 41,172. The author estimates the number of Greeks in the United States in 1910 to be approximately 185,000.

The work is an effort to describe this important element of our new fellow citizens. It is divided into three parts. Part I is devoted to conditions, causes and sources of Greek emigration. The physical environment is described with its effect on the history and national character of the Greeks. The direct causes of emigration are carefully investigated and the effects of changes in Greek industries are noted. This portion of the work is exceptionally clear and enlightening.

Part II deals with the Greeks in the United States. An analysis of the statistical tables presented in the appendix is followed by a description of Greek colonies in the United States and a detailed study of the economic and social condition of the immigrants.

Part III traces the effects of Greek immigration (1) on the immigrant; (2) on Greece, and (3) on the United States. It is too early to be sure what the ultimate effect will be on the United States, but the effect on Greece is very perceptible and considered on the whole advantageous. The balance of trade in favor of Greece is traced to immigration and is viewed with favor by Greek statesmen while the drain made by the annual exodus of approximately 30,000 of the most virile and productive male citizens upon a total population of little more than 2,600,000 cannot but be viewed with alarm.

The book is well written; is clear, concise and readable, and reflects credit upon the scholarly training afforded by the university (Yale) for which it was written as a doctor's dissertation.

J. P. LICHTENBERGER.

*University of Pennsylvania.*

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**Ferrero, Gina L.** *Criminal Man, According to the Classification of Cesare Lombroso.* Pp. x, 322. Price, \$2.00. New York: G. P. Putnam's Sons, 1911.

American students of criminology will welcome this concise summary of  
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Cesare Lombroso's three-volume work, "The Criminal Man," by his daughter, Gina Lombroso Ferrero, who was the collaborator of her father in all his work. This volume is not a translation of excerpts, but an original interpretation. The introduction was written by Prof. Lombroso and was the last literary work performed by this gifted student and author.

Mrs. Ferrero in her interpretation follows the general outline of her father's treatment of the subject. The born criminal is an atavistic being, "a relic of a vanished race," who reproduces the traits of lower animals and savages in the midst of civilization. The insane criminal is simply the mentally defective whose conduct, unregulated by moral choice or incentive, becomes dangerous or anti-social. In both these groups criminality is the normal conduct of the abnormal man. The criminaloid class, which was differentiated later by Enrico Ferri into the criminal by occasion and passion, is the product of environment rather than heredity.

Some new material is added in the second portion of the book dealing with crime, its origin, cause and cure. The following is an admirable summary of modern penological science.

"The modern school aims at preventing the formation of criminals, not punishing them, or failing prevention, at effecting their cure; and failing cure, at segregating such hopeless cases for life in suitable institutes, which shall protect society better than the present system of imprisonment, but be entirely free from the infamy attaching to the prison."

A brief survey of American institutions visited by the author indicates how the people of the United States are attempting to utilize in practice the principles of scientific penology. It is perhaps unfortunate that this survey did not include more of our representative institutions.

After a chapter on methods of measuring criminals and another on practical results in the use of anthropometry in determining the guilt or innocence of the accused the book concludes with a valuable appendix in which are given brief analytical reviews of the complete works of Lombroso.

J. P. LICHTENBERGER.

*University of Pennsylvania.*

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**Fitch, John A.** *The Steel Workers.* Pp. xiii, 380. Price, \$1.50. New York: Charities Publication Committee, 1910.

**Byington, Margaret F.** *Homestead, the Household of a Mill Town.* Pp. xv, 292. Price, \$1.50. New York: Charities Publication Committee, 1910.

The two latest volumes in the Survey Series deals with different phases of the same topic, the life of the steel worker,—*"The Steel Workers"* covering the working life, and *"Homestead"* covering the domestic life of the men who are making Pittsburgh wealthy and famous. Most of the material in both volumes has already been published in the *Pittsburgh Survey* (1909). Numerous pictures, some additional statistical tables, and a considerable increase in the amount of letter press would hardly seem to justify the publication of two such bulky volumes as those now under review. The

reader of the Pittsburgh Survey leaves these two books with a feeling of regret that they should have failed so signally to increase the sum total of knowledge which was contained in the original Pittsburgh Survey.

"The Steel Workers" analyzes intensively the work of steel making, the struggle which has been waged during the past three decades between the unions and the employers, the working conditions which have prevailed since the overthrow of trade unions in the great strike of 1892, and the spirit of the mill towns as reflected in their citizenship. The discussions are thorough and incisive, as the author shows a remarkable grasp of the subject of steel making as well as of the lives of men. The appendices combine a large amount of material valuable to the student of unions and strikes.

In "Homestead" the author has stated in detail the wages of ninety workmen's families, discussing rent, food, and the various other expenditures, and showing their relation to wages and the cost of living. The whole study is divided on a nationality basis, the first half being devoted to the English-speaking households, and the second half to the households of the Slavs. In this volume again the appendices contain some valuable material for the statistician or the social worker interested in the collection of cost of living statistics.

The material originally appearing in the Pittsburgh Survey was of the highest quality, and representing, as it did, the most far-reaching and thorough investigation ever made into the work and lives of an American community, it aroused nation-wide interest. Both the social workers and the general public will feel a keen regret that four years have elapsed between the collection of this data and its final publication in book form. Social facts to be of value must be used when collected since they depreciate with alarming rapidity.

SCOTT NEARING.

*University of Pennsylvania.*

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**Fite, W.** *Individualism*. Pp. xix, 301. Price, \$1.80. New York: Longmans, Green & Co., 1911.

The Sociologists have insisted all along that social order is remarkable and needs explaining. They have declared that the ingenuity of the great thinkers of every age has been given to working out the philosophies, dogmas, codes, standards, ideals, and institutions, by which is achieved such imperfect social harmony as we see. But for fifteen years the psychologists like James, Dewey, Royce, and Baldwin have made the sociologists, with their study of punishments and laws and magistracies and other restraining institutions, look rather ridiculous. According to them, the altruistic and disinterested is so much a part of human nature that social order is in no need of explaining. Social control is superfluous, for harmony comes about of itself. Now comes Professor Fite in a virile, close-reasoned, pungent book, and shows that the individual remains everlastingly distinct, and evinces no tendency to sink his life in that of others or of the group.

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Professor Fite agrees with Socrates that virtue is knowledge, that all who clearly know the right do it, and therefore with him, the social man differs from the anti-social man only in point of intelligence. Criminal and good citizen are equally individualistic, but they differ in the degree to which they are conscious of their purposes and of the relations of other men to these purposes. All moral differences hinge on intelligence, and the selfish man is simply the *inconsiderate* man, not he who thinks too much of himself but he who *thinks too little* of others. As a champion of individualism, the author does not derive individual rights from the recognition or support of society, but from a man's own nature. He reaffirms "natural rights" and upholds a man's right to get "whatever he wants intelligently." By that saving word "intelligently" he avoids having to justify the hoggishness of monopolist or grafter, and really slips in the idea of what is "reasonable," i. e., compatible with the social welfare.

The author is most helpful in showing the futility of schemes of social reconstruction predicated upon the growth of brotherly love. He is right in insisting that the better social order is not to be achieved merely by denouncing or denying or blunting individual self-assertion in the name of a transcendent social interest, but by "an intelligent analysis of individual interests, and a scientific discovery and invention of methods of co-ordination." How true this is will be realized by anyone who has had experience in constructive social reform or legislation. Not "renunciation of individual interests" but the adjusting of them "in mutual satisfaction and freedom" is the path to social peace. The social good that will be attained through a more intelligent and comprehensive organization than we now possess will be not "a common good," but "a mutual and distributive good." The vague goal of "a common good" is held out simply because the principles have not yet been thought out on which the good achieved through co-operation will be distributed to individuals in the coming generation.

On the other hand, we cannot for a moment accept *in toto* the author's psychology. Human beings are not so sharply and persistently distinct in their consciousness as he assumes. At times one's self-thought becomes faint, and one enters into the existence of other people, even of animals, trees, and heirlooms. Again, his theory obliges him to deny the possibility of that rare love which exacts nothing from the beloved, not even recognition. He invites us to regard society as a relation of conscious beings quite out of space, geographic relation, and the struggle for existence. We sociologists will continue trying to explain reality instead of speculating on the social life of perfectly self-conscious individualities, free from instinct, passion, habit, custom, conventionality, and other things which film the eye of intelligence.

The book is a blast of relentless logic, clear thinking and manly feeling into a department of philosophy that has become of late rather stuffy.

EDWARD ALSWORTH ROSS.

University of Wisconsin.



**Gibbon, I. G.** *Unemployment Insurance.* Pp. xvii, 381. Price, 6s. London: P. S. King & Son, 1911.

The present volume, with its detailed analysis of unemployment, and of the operation of unemployment insurance schemes in the various European states, throws considerably less light on the problem than the many books which have preceded it.

Unemployment insurance is of two kinds, compulsory and voluntary. The former has been tried in only a few cases, and with very questionable success, while voluntary insurance, on the other hand, is much more widely extended, although its success is scarcely more noticeable. On the whole, therefore, at the present writing, the net result of unemployment insurance has been anything but satisfactory from the standpoint of the unemployed and of the state administering the insurance. In summing up the results of his study, the author concludes that some form of insurance against unemployment should be issued; that the community should assist financially; that the insurance should be so given as to encourage self help; that the system should be administered from a central agency; that the system should not be compulsory; that voluntary, private organizations should be used as a means for administering the unemployment benefits; that subsidies should be paid in proportion to benefit, and that the machine for administering the unemployment system should be in the hands of a committee of experts.

While the author's subject is one of paramount importance, his treatment of the material is defective. Not only is his compilation of data careless, but he has succeeded in creating a work which makes neither good popular reading nor scientific reference material. The book will appeal neither to the socially minded member of the community nor to the student of the unemployment problem.

SCOTT NEARING.

*University of Pennsylvania.*

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**Hall, G. Stanley.** *Educational Problems.* Vols. I and II. Pp. xix, 1424. Price, \$7.50. New York: D. Appleton & Co., 1911.

This work does for the pre-adolescent years of elementary schooling what the earlier "Adolescence" did in the field of secondary education; that is, it examines all the chief activities of the school from the standpoint of the biological and psychological individual. The volumes are as remarkable for what they omit as for what they contain. One would hardly know, except from remote implications, that we live in a social world at all. Everything is biology and psychology; man as a social and economic creature has scant recognition. However, a work must be judged by what it contains, not by what it omits.

The most impressive aspect of these volumes is that they summarize the efforts not only of one mind, but of many minds, for many years. The author says: "For twenty-five years I have lectured Saturday mornings to teachers and to students upon education, and this book is the final revision of parts of this course up to date, ending February, 1911." Clark University



has the unique position of being the only American university in which the primary interest of president, faculty, and graduate students has been education. The "Pedagogical Seminary" has been their organ of publication, and the present books reflect the total activity. One way in which this academic team-work is shown is the citations to literature, domestic and foreign. Instead of giving a bibliography of names, we have extended abstracts of what the books contain. This feature is especially significant, for what we get is not a card catalogue, but the contents of a library.

One finds everywhere abundant evidences of the author's well-known virility of thought, his fluency and aptness of expression, as well as his equally well-known tendency to use words not found in the dictionary.

Few of the ideas advanced will strike the older readers of President Hall as novel, for the work is rather a summary of old thoughts than an exposition of new positions. Thus, the articles on sex have the familiar intimacy of a medical treatise as usual. The chapter on the Kindergarten makes the usual vigorous protest against the crystalization of the pedagogical notions of Froebel into a religious cult, with its ritual and sacred mysteries. That admirable classic, "Children's Lies" comes forth again to delight and admonish. Among the other articles one finds the following: Pedagogy of Modern Languages, of History, of Elementary Mathematics, of Reading, of Drawing, of School Geography, of Music, and of Sex. Then there are chapters on Dancing and Pantomime, the Sunday School, Moral Education, Industrial Education and on Missionary Pedagogy.

As these volumes are probably President Hall's pedagogical valedictory, most American school men will read them with feelings of regret and of gratitude—regret that they are the last, and gratitude that so much has been contributed to the advance of education, for President Hall has certainly enriched and dignified a field of thought which has not always had the respectful acclaim of all men. And if he has a noble record of work accomplished, he has also sown freely seeds of future harvests.

CHARLES DE GARMO.

Cornell University.

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Henderson, Chas. R. (Ed. by). *Correction and Prevention*. 4 vols. Vol.

I—Prison Reform, C. R. Henderson (Ed.), F. B. Sanborn, F. H. Wines and others, Criminal Law in the United States, Eugene Smith; Vol. II—Penal and Reformatory Institutions, by sixteen leading authorities; Vol. III—Preventive Agencies and Methods, by C. R. Henderson; Vol. IV—Preventive Treatment of Neglected Children, by Hastings H. Hart; Pp. cxvii, 1490. Price, \$10.00. New York: Charities Publication Committee, 1910.

This monumental work in American Penological Science appears in four volumes, under the general title of "Correction and Prevention." It was designed as a souvenir for our honored guests, the European delegates to the Eighth International Prison Congress, held in Washington, D. C., in October, 1910.

The plan was devised by the late Dr. S. J. Barrows, United States Commissioner on the International Prison Commission, and president of the International Prison Congress. After the death of Dr. Barrows, in April, 1909, Dr. Charles R. Henderson was appointed by President Taft to succeed Dr. Barrows, and upon him fell the responsibility of general editor of the work. The enterprise was financed by the Russell Sage Foundation, under the oversight of its director, Mr. John M. Glenn. Of the purpose of the undertaking, Dr. Henderson says: "It has been the purpose of all concerned to present in these volumes, with fidelity to truth, the most essential facts, without controversy and without boasting, and to interpret the historical movements treated, so as to discover their genuine significance." "In this story they (our foreign delegates) will find much to criticize; the faults of a rapidly growing country whose development in material wealth has outrun its legislation and its institutions of culture; but we trust they will also find here a powerful and advancing movement to correct recognized evils, to promote order and security and to further the general enlightenment."

It is apparent that the aim of the editors was not to present the most advanced ideas of our American scientific students of criminology except as they are embodied in concrete movements, but to tell the story of our progress and achievement.

The material, therefore, takes the form of a compilation and a historical résumé. This serves admirably the purpose for which it was intended originally, and in addition it provides an encyclopedic source of information for the social student generally in this most important field of human endeavor.

**VOLUME I. PRISON REFORM AND CRIMINAL LAW.** Following the Editorial Introduction, we have in Chapter I a Historical Introduction, by F. H. Wines, followed by the Declaration of Principles Promulgated at Cincinnati, Ohio, in 1870. Other chapters are C. E. Wines and Prison Reform. a Memoir, by F. B. Sanborn; The American Reformatory Prison System, by Z. R. Brockway; Possible and Actual Penalties for Crime, by F. H. Wines; Biographies of Samuel June Barrows, by Paul U. Kellogg, and of Gen. Rutherford B. Hayes, by M. F. Round. Other Biographies of Frances Liever, Theodore W. Dwight, Edward Livingston, Dorothea Lynde Dix, Ellen Cheney Johnson and Gardiner Tufts, complete the volume. To the historical development of thought in regard to prison science has been added the biographical method. This not only affords greater interest through personal insight and familiarizes the reader with the names of the workers who have created American Penology, but it enables one to trace the processes by which trained minds reacted against the evils and abuses of their time and evolved the principles of the new rational order. Some whose interest will centre primarily, neither in the history nor in the principles of the science, will, nevertheless, be attracted by the achievements of the men and the women who have made the history and who have been the embodiment of sympathy while they sought to apply the principles dis-

covered through scientific research to the practical problem of criminal reform.

Bound under the same cover, but edited by Eugene Smith, president of the Prison Association of New York, is a separate treatise of 119 pages, including the index, entitled *Criminal Law in the United States*.

While this portion of the work is intended to be chiefly descriptive, and from this point of view is admirably done, it is written by one who is identified with the progressive movement, and the chapters on The Primitive System of Criminal Law and the Indeterminate Sentence constitute a most admirable commentary upon the new trend toward a more humane and effective administration of criminal law. Retributive punishment has failed to work the reformation of the criminal or to secure social defense against crime. The overwhelming majority of released convicts who return to criminal pursuits is the most serious indictment against our present penal system. "Imprisonment for a fixed term under the old punitive system yields only temporary protection to society, lasting until the expiration of the term, when the original danger is revived in an aggravated form. The indeterminate sentence makes the protection permanent."

**VOL. II. PENAL AND REFORMATORY INSTITUTIONS.** In this volume practically every phase of our prison system, from the "Station House" to the separate Reformatories for men and women, is considered in thirteen chapters by as many different writers. The scope of Educational Work in Prison and The Prison Physician and his work are treated by several different writers. Of the papers, Dr. Henderson says: "They may be regarded as the sincere and reliable expression of convictions and purposes which promise to control the future." Of the writers, he says further: "They are men of long experience, and the fact that in a country where changes are so frequent and political appointments so uncertain, they have stood at their posts long enough to acquire professional skill and effect genuine reforms, gives promise of the near triumph of the 'merit system' over the 'spoils system' which has done our country so much harm. They are not only men of this worthy class, but they are types of the kind we prefer and mean to have in office the country over."

While the volume is a source-book of information concerning our prison system in actual operation, it is not a boastful presentation of the "high aims of the most enlightened administrators," but presents rather a critical analysis of the weaknesses and imperfections of our system. Taken in connection with the historical and biographical treatment presented in the first volume we have an admirable summary of the situation.

**VOLUME III. PREVENTIVE AGENCIES AND METHODS.** In this volume, written by Dr. Henderson at the request of Dr. Barrows, the subject is transferred to the field of criminology. Knowledge adequate for the construction of an intelligent penal system must rest upon inductive studies of the factors of crime. As long as criminality was regarded as the abnormal conduct of the normal man and due simply to moral perversion, no science of criminology was possible. Ever since the discovery that criminal statis-

tics do not group themselves closely about the normal curve of chance distribution scientists have been engaged in the study of physical and social causation in the attempt to discover intelligent explanations. The result is the modern science of criminology. Professor Henderson, according to approved modern methods, locates the causes of crime in the inheritance of defects, in physical, economic and educational conditions. Preventive agencies and methods must be employed in the light of these facts. The volume deals with the changes that are being made in present methods through the better understanding of the problem thus secured.

VOLUME IV. PREVENTIVE TREATMENT OF NEGLECTED CHILDREN. This volume was edited by Hastings H. Hart, Director of the Department of Child Helping of the Russell Sage Foundation. Most of the book is written by Dr. Hart, but his work has been supplemented by articles by other leading authorities. The volume was prepared primarily as a chronicle of the work for neglected children in the United States in more than a thousand institutions and of more than a hundred societies. The importance of the subject in connection with criminology rests on the established knowledge that the criminal ranks are steadily recruited from the class of neglected children and that one of the most effective means of lessening crime from this source is to attack the problem on its preventive side by giving proper care to the neglected group. Within the limited scope of a single volume Dr. Hart has covered the entire range of agencies dealing with the problem. We can do little more than indicate the scope of the work. The captions of the seven parts of the book are: I, Institutions for Delinquent Children; II, Institutions for Dependent Children; III, Cottage and Congregate Institutions for Dependent and Delinquent Children; IV, Child-Helping Societies; V, Family Home Care—The Placing Out System; VI, The Juvenile Court; VII, Miscellaneous Preventive Agencies. An appendix contains the Rochester juvenile court law of 1910, generally recognized as embodying the best features of the various juvenile court laws in the United States.

It was perhaps unavoidable that such a work should contain some repetition and also divergent views upon the same topics. Each volume is complete in itself, the whole set containing the best and most comprehensive statement of the problem of American penology yet written. It is an achievement worthy of the great mind that conceived it.

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